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A British Study in Profit Graphs to Control Profit

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The use of the procedure here developed, after considered presentation of graphic portrayal of total and average unit costs—over-all and for individual products—in relationship to sales or selling prices, centers around a profit control record for orders booked. This, in turn, depends for its usefulness on a profit graph at average cost per unit, from which "target" profit at various price ranges (and corresponding volumes) may be read. This graph is supplemented by a deviation-from-average schedule, to facilitate handing changes in product mix.

THE PROFITS OF BUSINESS VENTURES depend largely on external factors, and to this extent, cannot be controlled in an absolute sense. Within the limits imposed by external conditions, however, a measure of control can be exercised and control in this sense usually embodies three features:

A profit target — which is the final expression of a feasible plan of activities prepared in advance.

Day to day controls — or means of assessing action taken or contemplated in terms of its effect in relation to this target.

A periodic summary — or analysis of the reasons for deviations which emerge on comparison of actual results with the target.

If these general principles are accepted, it is clear that, in selecting methods to apply profit control under current competitive conditions, we have to meet certain requirements:

The profit target must be established and applied in a simple and flexible way, so that sales plans can be revised as often as need be with a minimum of rebudgeting and recalculation of costing data.

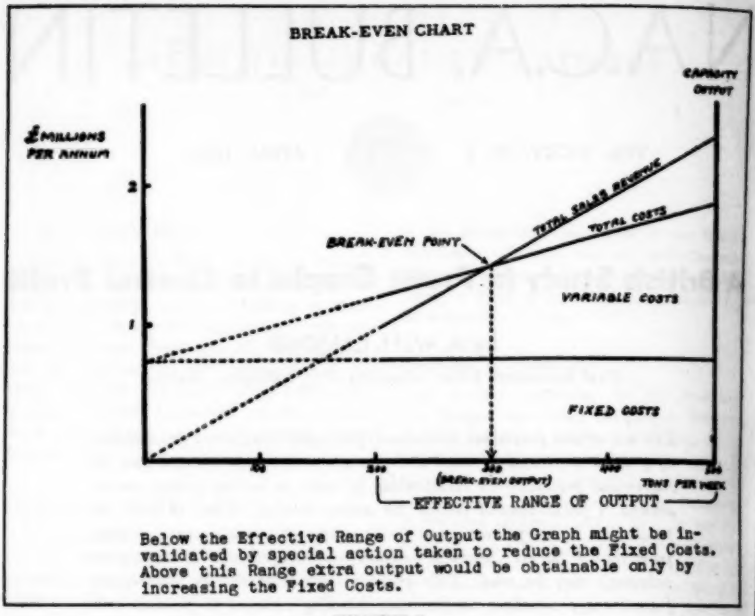

BREAK-EVEN CHART
£ MILLIONS PER ANNUM
CAPACITY OUTPUT
2
1
TOTAL SALES REVENUE
TOTAL COSTS
BREAK-EVEN POINT
VARIABLE COSTS
FIXED COSTS
(BREAK-EVEN OUTPUT)
TONS PER WEEK
EFFECTIVE RANGE OF OUTPUT
Below the Effective Range of Output the Graph might be invalidated by special action taken to reduce the Fixed Costs. Above this Range extra output would be obtainable only by increasing the Fixed Costs.

EXHIBIT 1

Day-to-day control of costs must be effectively applied. (This is a subject in itself and is not covered by the present paper). Day-to-day control of profit must be exercisable at the time when orders are booked or considered.

Periodic over-all analyses need not be complex but should in fact be simple, to convey a clear picture.

Graphic Approach to Over-all Cost and Profit Analysis

The choice of methods which meet these requirements must, of course, depend on the nature of the business. The illustration which follows assumes a business selling a range of (say) 100 products by weight. Although broadly homogeneous, the products vary significantly in cost, selling price and margin—not only as between different products but also in different countries. The mix of products sold and the mix of markets in which they are sold, are therefore both significant factors in determining the profit earned over any long period. On the other hand, the spread of products is sufficient to ensure that over-all average costs do not fluctuate violently from month to month. This is a normal condition whenever changes in mix of products entail changes in manufacturing arrangements which limit the rate of change.

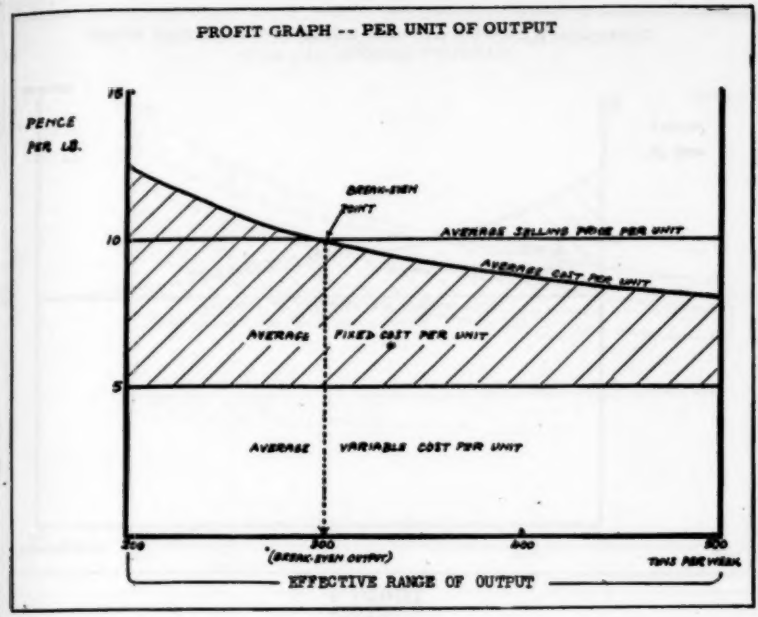


EXHIBIT 2

Although this example is a relatively simple one, the methods it serves to illustrate are capable of adaptation to most businesses, provided that a satisfactory common measure of volume can be introduced and used also as a cost denominator. In some cases, actual weight, length, area or bulk will serve. In others, it may be necessary to introduce the concept of an equivalent standard weight, length, area or bulk, which reflects the relative absorption of factory capacity. Even where production is of a heterogeneous nature (as in general engineering), estimated or standard hours or cost, can be adapted to the same end. Where there are violent fluctuations from month to month in over-all average costs per unit, it may be necessary to deal separately with groups of products within which this condition does not arise.

Under the conditions envisaged, a simple approach to the problem is provided by the familiar profit graph. Such graphs are commonly drafted in the form of a breakeven chart, such as Exhibit 1. This indicates total costs and total sales revenue over a range of output levels. Total costs include (strictly) three types of costs:

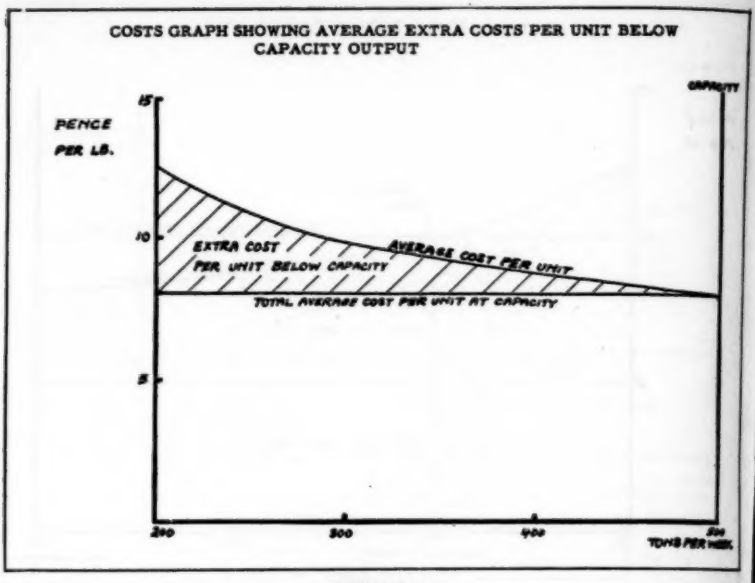


EXHIBIT 3

Fixed costs—such as rent, depreciation, salaries etc., which may be expected to remain constant in amount throughout the range of output levels under consideration (very low levels are usually omitted).

Semi-fixed costs—such as indirect labor, maintenance etc., which may be expected to vary or fluctuate but not necessarily directly in relation to the volume of output.

Variable costs—such as materials, direct wages and other items which may be expected to vary directly with the volume of output.

For practical purposes, semi-fixed costs can often be allocated as between fixed and variable components in such a way as to simplify the picture (as in the example) without causing significant error.

The sales revenue, on any given price basis, is obviously a straight line from the point of origin. This line crosses the total costs line at the level of output at which neither profit nor loss would be expected—known as the break-even point. Above this level, the widening gap between the sales revenue line and total costs line indicates the increasing profit to be expected at increasing levels of output. Below this level, the similar gap indicates the increasing loss to be expected as output falls. Any alternative price basis can be reflected by changing the slope of the sales revenue line, which will then indicate the different break-even and profit possibilities resulting.

The profit graph can also be drafted to show the average cost per unit of

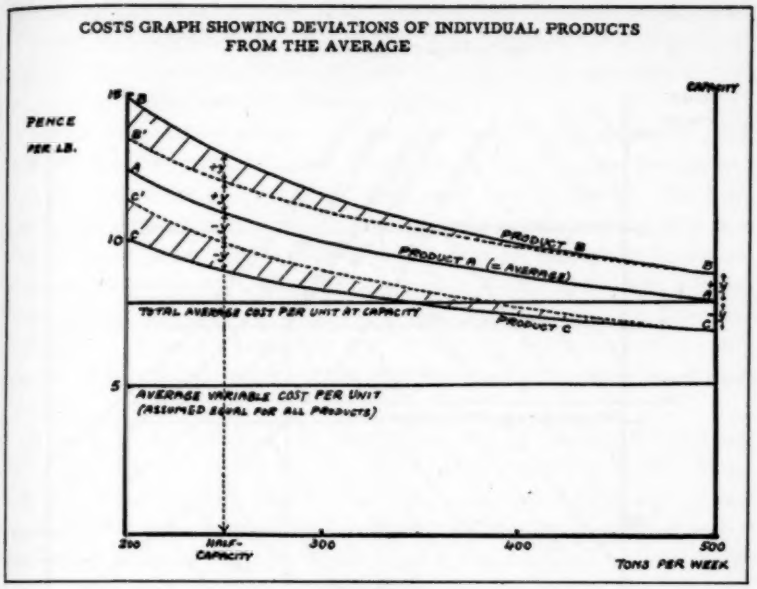


EXHIBIT 4

output throughout the range of output levels selected—as in Exhibit 2. In terms of cost per unit, the variable costs become the constant and are expressed, on this type of graph, by a horizontal straight line, while the fixed costs and, therefore, total costs have to be expressed by a curve. The average selling price per unit is also expressed by a straight horizontal line. The break-even point will, of course, occur at the same level of output as on the first graph but the widening gaps above (or below) it will indicate, for each level of output, the average profit (or loss) to be expected per unit instead of the total profit or loss). Such a graph has interesting possibilities both as an aid in establishing a target profit under given conditions and as a method of presenting cost information.

Getting at Individual Product Costs: Two Concepts

The graph shown in Exhibit 2 is, of course, an overall picture for the whole business. The unit figures for selling price, cost and profit are, therefore, averages for all products in all markets. If information is to be given for for specific products and markets, deviations from these averages must be known. Exhibit 3 shows the same total cost per unit as was used in Exhibit 2 but splits this total cost into two components:

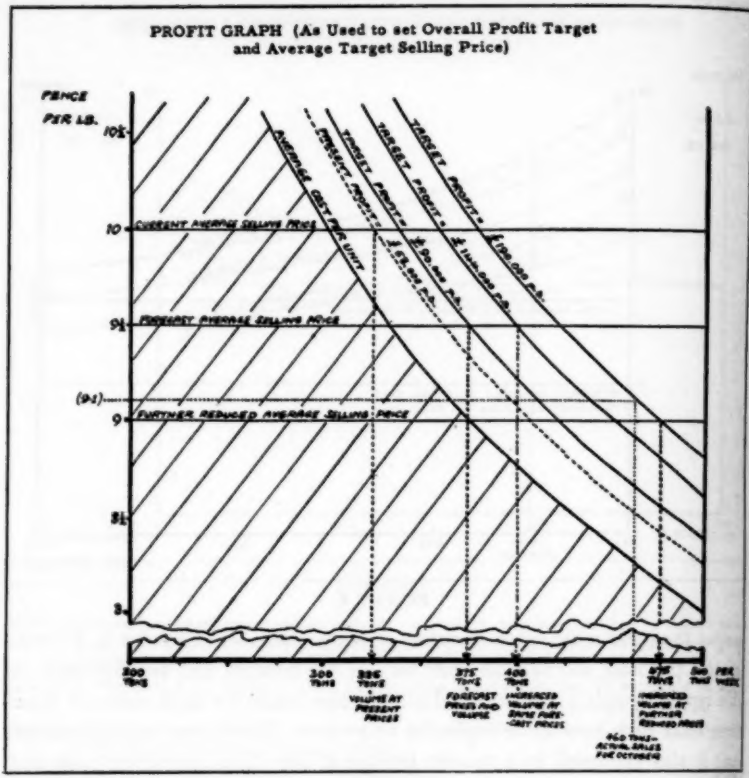


EXHIBIT 5

1. **The average cost per unit when the factory is operating at capacity output (which is a constant).**
2. **The average extra cost per unit when the factory is operating below capacity output (which is represented by the shaded area and increases rapidly as the level of output falls).**

If we adopt the historical cost concept, then, whenever output is below capacity, both these components enter into the so-called actual cost of any product. If we adopt the capacity cost concept, the extra cost per unit incurred when output is below capacity (i.e. the shaded area on the graph) is no part of the cost of the units actually produced but is rather a part of the cost of the units not produced. If the latter concept is accepted, it is clear that it would be improper, therefore, to allocate this extra cost of idle capacity to products as a matter of costing. It is true, nevertheless, that, if a profit is to be ensured,

this expenditure must be recovered but how this should be done becomes rather a matter of policy than of cost allocation. One rational method is to "levy" the extra expenditure equally over all units of product—as is automatically done in Figure 2, which shows over-all average figures.

Whichever concept is adopted, differences in variable costs as between products will obviously remain constant at all levels of output and can be expressed as a simple deviation of (say) $\pm \times$ pence per lb from the average. The treatment of fixed costs, however, will depend on the concept adopted and, to present this simply, it is assumed in Exhibit 4 that there are only three products—one coinciding with the average we have seen in Exhibit 2, one with a higher fixed overhead cost, and one with a lower fixed overhead cost. Since differences in variable costs are a constant per lb at all levels of output, we shall simplify the picture further by assuming at this stage that these are the same for all three products.

If we adopt the historical cost concept, the costs of products B and C are given by the lines B-B and C-C respectively while the cost of Product A remains the over-all average given by A-A. The differences $+y$ and $-y$ represent more and less than averages fixed overheads attracted by Products B and C respectively at capacity output. When output is a half capactiy, however, Product B attracts fixed overheads in excess of the average to the extent of $2y$ while Product C attracts fixed overheads below average to the extent of $2y$. This is difficult to justify, inasmuch as the extra fixed overheads which are being manipulated in this way may have little connection with the products, the costs of which are fluctuating because of them. The reduction to half-capacity might be due, for example, to a falling off in the volume of Product A. This concept of cost is, therefore, dangerous, since the costs of products with high fixed overhead content tends to be exaggerated through having to carry an undue proportion of idle capacity cost at low levels of output. If pricing policy has regard to such costs, these products can be "costed off the market." Products with low fixed overhead content, on the other hand, tend to escape their fair share of idle capacity costs.

If we adopt the capacity cost concept, all product costs are established at capacity level and we apply a "levy" to cover idle capacity costs on some fair basis. The basis to be adopted is a policy decision which must be taken in the light of the particular circumstances of the business. Once the basis has been established as a policy matter, however, the levy can for practical purposes be included in the quoted cost figure (really true cost + levy), which is used to determine sales policy. To continue to handle the levy as a separate factor would

DEVIATION SCHEDULE (Showing Cost (and Target Selling Price) Deviations from Average for Individual Product/Market Combinations)

PRODUCT	DEVIATIONS IN PENCE PER LB.		
	HOME MARKET	S. AMERICAN MARKET	N. AMERICAN MARKET
A	Nil	+ 2	+ 1
B	+ 1	+ 3	+ 2
C	− 1	+ 1	Nil
D	− 5	− 3	− 4
E	+ 2	+ 4	+ 3

EXHIBIT 6

be a needless complication, although it may be useful to know its extent at any level of output for purposes of marginal cost pricing.

If we assume that, in our example, the basis chosen is (say) weight of product, the effect on our graph (Exhibit 4) is that the shaded areas can be ignored, and will, of course, cancel each other. The costs of Products B and C (including the levy) are shown by B^1 — B and C^1 —C. At all levels of ouput deviations from average fixed costs then become a constant per unit, based on their amount at capacity output. Deviations in variable costs are also a constant per unit and the two can therefore be added together for each product to give a total deviation: $\pm x \pm y = (\text{say}) \pm z$. The appropriate over-all average read from the graph, together with the resultant deviation of $\pm zd$ per pound, will then give the cost of any product at any level of output. In this cost is, of course, included a "fair share" of idle capacity cost if any.

Graphic Presentations to Help Set Prices, Profit Target

A unit cost graph, on the lines of the shaded part of Exhibit 5, showing the average unit cost for the whole business (or for some suitable division of it) provides a simple means of conveying over-all cost information to those responsible for determining sales policy. By supplementing it with a simple schedule of deviations in cost per pound ($= \pm z$ above), along the lines of Exhibit 6, it obviates recalculation and issue of cost data for different levels of output each time changes are made in sales plans. Such information can be easily

kept up to date as regards other variables by the issuance of a new graph whenever significant changes take place in the over-all picture and by amendments to the deviation schedule as and when necessary.

Before going into the uses of Exhibits 5 and 6, however, let us consider briefly the construction of the cost graph constituting the shaded part of Exhibit 5. Standard cost methods of cost finding, using capacity standards, will most readily provide the data required, and, if the costs used are based on reliable estimates of future variances—rather than past experience—the best possible guidance will be given to those responsible for establishing sales policy. Exhibits 7 and 8 give details of the construction of such a unit cost graph by scheduling fixed overheads, together with the estimated cost of semi-fixed items at selected points throughout the range of output levels covered. It may be convenient to include on this schedule (as indicated by Exhibit 8) all administration and selling expenses, even those which are wholly variable, such as commission. It may also be convenient to deal with all works costs as a constant per pound of product on a capacity basis (as shown in Exhibit 7) and to include in the administration and selling costs schedule (Exhibit 8) the estimated under-recovery of fixed or semi-fixed works costs at each selected output level below capacity. The total cost curve can thus be established without great difficulty and with adequate accuracy.

Having seen something of the construction of the unit cost graph, we can now revert to Exhibit 5 on which its appears as the shaded portion. This becomes a profit graph when we superimpose on it the current average selling price to show the average margin available per unit at each level of output. Lines can also be drawn to indicate the combinations of average price per unit and the volume which would result in any given over-all profit rate per annum for the whole business. Three such lines are shown on Exhibit 5. If the over-all average selling price does not fluctuate violently month-by-month, this type of graph can be used to establish profit targets on a broad basis. By reference to current volume forecasts and selling price trends, a feasible profit target can be readily selected for the next period of (say) 6 months.

For example, let us assume that it is planned to reduce certain selling prices and that the estimated effect of these reductions on the over-all average will be to reduce it by ½d to 9½d per pound. Let us assume also that sales forecasts —taking into account the effect of the new prices—indicate an output level of (say) 375 tons per week for the next six months. Such anticipations will, of course, be calculated in as much detail as the significance of the anticipated changes may justify. Having assessed future conditions in this way, an over-all

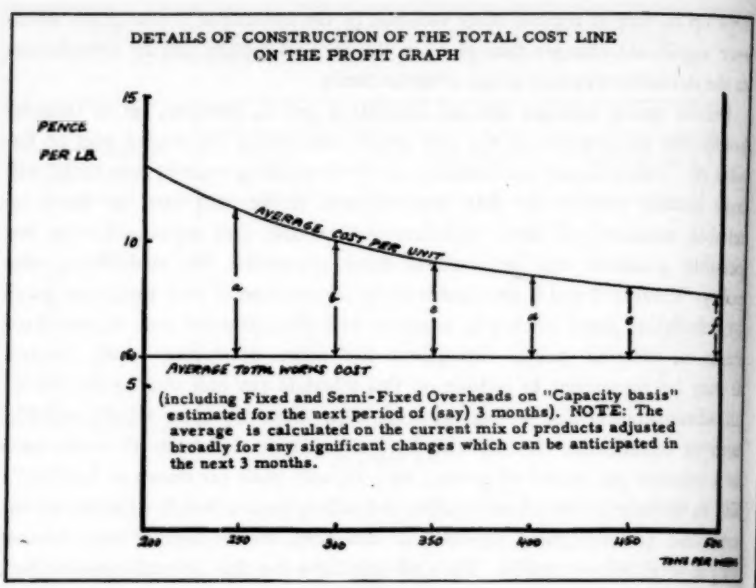

DETAILS OF CONSTRUCTION OF THE TOTAL COST LINE
ON THE PROFIT GRAPH
15
PENCE
PER LB.
10
5
AVERAGE COST PER UNIT
AVERAGE TOTAL WORKS COST
(including Fixed and Semi-Fixed Overheads on "Capacity basis" estimated for the next period of (say) 3 months). NOTE: The average is calculated on the current mix of products adjusted broadly for any significant changes which can be anticipated in the next 3 months.
300
350
400
450

EXHIBIT 7

target profit rate of £90,000 per annum is indicated by the graph and may reasonably be adopted for the next six months.

Such a target can be readily changed without extensive rebudgeting, whenever sales volume forecasts or price changes require this. Moreover, sales forecasts can be varied within limits, both as to volume and margin, without significantly altering the approximate level of profit aimed at. In fact, the selling organization should always try to compensate in other directions for any adverse factors as they arise, so that, once a profit target has been set, they can maintain this target as long as practicable. We shall see later that the nature of the day-to-day control suggested will encourage this attitude.

Profit targets set in the way suggested may not have so precise an appearance as targets based on detailed forecasts of sales by products and markets for which costs and invoice values have been computed and budgeted in corresponding detail. It is doubtful, however, if the apparent precision of such forecasts is real. In many businesses today, forward forecasts, although made (quite properly) in great detail, cannot be claimed to be, in fact, so realistic that it is worthwhile to make the calculations of cost and profit follow the full detail of the forecasts. Their extension in this way may well be equivalent to working

SCHEDULE OF ADMINISTRATIVE EXPENSES, SELLING EXPENSES AND UNRECOVERED FIXED AND SEMI-FIXED WORKS COSTS

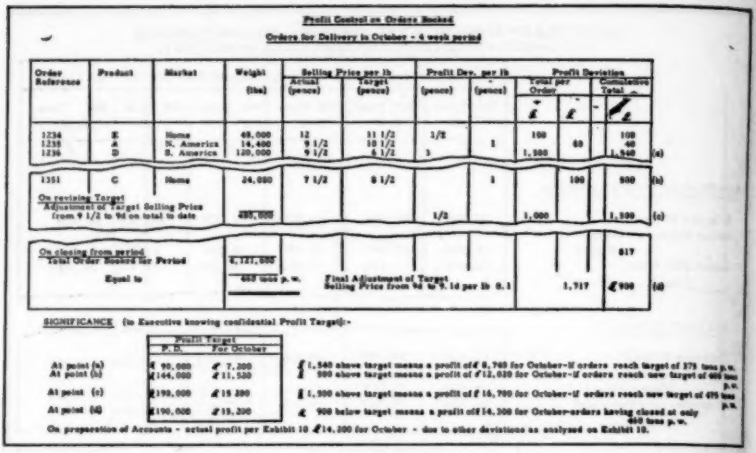
	ESTIMATED ANNUAL COST AT SELECTED OUTPUT LEVELS					
	250 Tons P. W.	300 Tons P. W.	350 Tons P. W.	400 Tons P. W.	450 Tons P. W.	500 Tons P. W.
	£	£	£	£	£	£
ADMINISTRATIVE EXPENSES						
Salaries (Fixed)	80,000	80,000	80,000	80,000	80,000	80,000
Office Expenses (Semi-Fixed)	10,000	10,500	11,000	11,500	12,000	12,500
Bonus (Variable) (etc.)	12,500	15,000	17,500	20,000	22,500	25,000
SELLING EXPENSES						
Salaries (Fixed)	60,000	60,000	60,000	60,000	60,000	60,000
Travelling Expenses (Semi-Fixed)	20,000	21,000	22,000	23,000	24,000	25,000
Commission (Variable) (etc.)	25,000	30,000	35,000	40,000	45,000	50,000
UNRECOVERED WORKS COSTS						
Fixed Costs	116,700	93,700	70,300	47,000	23,300	Nil
Semi-Fixed Costs	5,000	3,000	3,000	2,000	2,000	Nil
TOTAL	£583,300	£560,000	£530,800	£513,300	£490,000	£466,700
PENCE PER LB	5.00d	4.00d	3.25d	2.75d	2.33d	2.00d
	(a)	(b)	(c)	(d)	(e)	(f)

EXHIBIT 8

to several insignificant places in an arithmetical calculation! As an alternative, therefore, the kind of result which can be much more easily achieved by the over-all methods described may give as high a degree of accuracy as was possessed by the forecasts themselves. When one considers also that, under competitive conditions, frequent changes in the forecasts may be necessary, the clerical effort of trying to make detailed cost calculations follow these changes, becomes even more prohibitive.

Day-to-Day Profit Control Through Target Selling Prices

Once the profit target has been set the next problem is to develop a simple way of applying it in the course of day-to-day control. For this purpose we introduce the concept of target selling prices which are the purely hypothetical prices at which each product would have to be sold in order to contribute its fair share of the over-all profit target on some rational basis. It is important to emphasize that there is no suggestion that actual selling prices should be adjusted to coincide with these target selling prices. Actual prices can rarely be rational (in relation to costs) since, under normal competition, they must always be



Profit Control on Orders Booked

Orders for Delivery in October - 4 week period

Order Reference	Product	Market	Weight (lbs)	Selling Price per lb Actual (pence)	Selling Price per lb Target (pence)	Profit Dev. per lb (pence)	- (pence)	Profit Deviation Total per Order £	- £	Cumulative Total £	
1234	E	Home	40,000	12	11 1/2	1/2		100		100	
1235	A	N. America	16,400	9 1/2	10 1/2		1		60	60	
1236	D	S. America	120,000	9 1/2	8 1/2	3		1,200		1,540	(a)
1351	C	Home	24,000	7 1/2	8 1/2		1		100	900	(b)
On revising Target Adjustment of Target Selling Price from 9 1/2 to 9d on total to date			480,000			1/2		1,000		1,100	(c)
On closing from period Total Order Booked for Period			£ 727,000							617	
Equal to			480 tons p.w.		Final Adjustment of Target Selling Price from 9d to 8.1d per lb 0.1			1,717		£900	(d)

SIGNIFICANCE (to Executive knowing confidential Profit Target):-

	Profit Target P. D.	Profit Target For October	
At point (a)	£ 90,000	£ 7,200	£ 1,540 above target means a profit of £ 8,740 for October-if orders reach target of 375 tons p.w.
At point (b)	£144,000	£ 11,520	£ 880 above target means a profit of £ 12,020 for October-if orders reach new target of 460 tons p.w.
At point (c)	£190,000	£ 15 200	£ 1,100 above target means a profit of £ 16,700 for October-if orders reach new target of 475 tons p.w.
At point (d)	£190,000	£ 15, 200	£ 900 below target means a profit of £ 14, 300 for October-orders having closed at only 460 tons p.w.

On preparation of Accounts - actual profit per Exhibit 10 £14,200 for October - due to other deviations as analysed on Exhibit 10.

EXHIBIT 9

determined by market conditions. Inevitably, some products in some markets, will contribute more than their fair share of the total profit targeted. Other product/market combinations will, correspondingly, produce less than their fair share.

The purpose of the target selling prices, therefore, is merely to enable assessment to be made of the satisfactoriness, or otherwise, of any given selling price at any time, from the standpoint of the current target rate of profit for the business as a whole. In this assessment lies the key to control of profits at the time when orders are booked or considered. It is insufficient that this assessment be made only periodically or haphazardly. It should be applied, as a matter of routine, to all incoming orders, so that their attractiveness, or otherwise, from the point of view of profit rate, is known and the cumulative result, as regards orders taken for any period, is continuously available.

This continuous assessment can be provided by the operation of a simple order record maintained for each period's orders in the form illustrated by Exhibit 9. This record is planned to show (by reference to the target rate of profit for the business as a whole) the deviation in profit arising from each order booked and the cumulative deviation for all orders to date. The target profit rate is, of course, confidential and need not be known to the clerical staff. Once the target has been set for a period, the staff is advised only of the average target selling price corresponding to the target profit at the anticipated level of output. This figure can be read from the confidential graph. For

example, having set the target profit rate at £90,000 per annum at an output level of 375 tons per week, the average target selling price (as shown by Exhibit 5) is 9½d per pound. Deviations from this average target selling price for individual products can then be taken to be the same in amount as the deviations from average cost. Thus the deviation schedule, in conjunction with the given average target selling price of 9½d per pound, enables the staff to make entry of the target price for any order.

For example, for the first order recorded on Exhibit 9, we get a target selling price of 11½d per pound made up:

Average target selling price for period	9½d
Deviation for product E in the home market, per deviation schedule (See Exhibit 6)	+2 d
Total target selling price for this product/market combination	11½d

It is then simple arithmetic to extend the profit deviation per pound, as compared with the actual selling prices, and to calculate the total profit deviation for the whole order. The profit deviations on all orders are then cumulated in the end column. Orders which are yielding more than their share of the target rate of profit are thus recorded with a correspondingly favorable deviation, while orders that are yielding less, will show an unfavorable deviation. In this way, orders can be judged good or bad from the margin or profit angle, apart from the mere volume or weight of production they contribute.

The cumulative profit deviation (plus or minus) on all orders in any given period is the measure of the extent to which the selling organization has been successful in balancing the mix of orders from the standpoint of maintaining the target profit rate for the business as a whole. Thus, when Exhibit 9 has been completed up to Point (a) the executive concerned knows that his target is a profit rate of £90,000 per annum and that this should give a profit of £7,200 for October on the basis of the number of production days in that month. The deviation of + £1,540 on the control sheet tells him that, so far, the orders booked should give a profit of £8,740 provided that he reaches the target volume of 375 tons per week.

Adjusting the Control for Changes in Target Profit

It is true, of course, that the target rate of profit may need to be revised. The forecast volume of sales for any period may change and/or selling prices may be raised or lowered. Changes in either of these two factors can be easily dealt with. If, for example, there is a major change in market conditions and the forecast volume increases from 375 tons per week to (say) 400 tons per

Periodic Summary

and Analysis of Deviations from Target

Month	No. of Days	Current Target Profit = £90,000 p.a. Per graph	Actual Profit	Overall Deviation		Analysis of Deviations			
				+ or -	Amount	Sales Volume & Margin	Controllable Selling Expenses	Controllable Production Costs	Administration and other Costs
		£	£		£	£	£	£	£
October	23	15,200	14,200	-	1,000	-900	-150	-100	+150
November	23	15,200	14,600	-	600	+400	-100	-150	+ 50
December	30	16,286	15,986	-	300	-100	- 50	-200	+ 50
January	23	15,200							
February	23	15,200							
March	30	16,286							

Cumulative Figures

Months to									
2 November	56	30,400	28,800	-	1,600	-1,300	-250	-250	+200
3 December	86	46,686	44,786	-	1,900	-1,400	-300	+450	+250
4 January	114	61,886							
5 February	142	77,086							
6 March	172	93,372							

EXHIBIT 10

week with no change in forecast selling price levels, then the new profit target (as shown by Exhibit 5) becomes £144,000 per annum. As the forecast average selling price has not changed, this new profit target does not alter the day-to-day profit control figures, but the cumulative deviation they record now relates to the new profit level of £144,000 per annum. At Point (b), therefore the control (Exhibit 9) tells the executive concerned that the October profit should be £500 above this new limit—giving about £12,000 profit for the month—provided that he reaches the new target volume of 400 tons per week.

If, on the other hand, it is decided to reduce selling prices by (say) a further ½d per pound (from the beginning of the month for which orders are now being booked) and it is anticipated that the effect of this will be to increase volume still further to (say) 475 tons per week, then the new profit target (as shown by Exhibit 5) becomes £190,000 per annum. (We may note here that the graph can be helpful in considering the desirability of such decisions—and this is a good example of "desirability!") Under the new conditions the average target selling price now becomes 9d per pound and the profit control figures shown on Exhibit 9 can be simply adjusted. On being advised of the new figure of 9d per pound the record clerk notes that this represents a decrease of ½d per pound on the old figure of 9½d per pound. The total weight of orders booked to date is, therefore, added (giving £480,000 as shown on Exhibit 9) and this total is multiplied by ½d per pound to give a total money adjustment of + £1,000. The cumulative deviation is now then

fore £1,500—and this, of course, applies to the new profit rate of £190,000 per annum. At Point (c), therefore, the control indicates a profit of October of £16,700, provided the new target volume of 475 tons per annum is reached.

At the end of each period, the order control will be finally adjusted to the level of sales volume in fact achieved. For example, let us assume that, on closing the order record for October, the orders actually booked total 4,121,600 pounds and this is equal to an average of (say) 460 tons per week, whereas the target selling price of 9d was based on a forecast of 475 tons per week. Reference to the profit graph then tells us that the target selling price corresponding to a corrected foremost of 460 tons per week would have been (say) 9.1d per pound. We, therefore, calculate, as a negative deviation, the 0.1d per pound on the total orders actually booked of 4,121,600 pounds to arrive at a final adjustment of £1,717, making the cumulative deviation from the target profits £900. In other words, the control indicates, at Point (d), that the actual profit for the month should be £900 short of the target rate of £190,000 per annum, and may, therefore, be estimated at £14,300.

The Periodic Summary for Management

If profits and costs have been effectively controlled from day to day, the final analysis at the end of each accounting period need not be complex. A statement on the lines of Exhibit 10 will tell top management simply and clearly:

1. The target profit as agreed in advance.
2. The actual profit as shown by the financial accounts.
3. The over-all deviation from the target.

This over-all deviation may be analyzed as far as it is worthwhile to take it. The extent will depend on what aspects are most significant in the particular business at the particular time with which we are concerned. As an example, the "Analysis of Deviations" given in Exhibit 10 includes the following columns:

Sales Volume and margin—If all orders booked for delivery in each month are in fact despatched in that month, the figure appearing here will agree with the total deviation built up from day to day as the orders were booked. To the extent to which despatches are not as programmed, a reconciliation can be made if the difference is material. The figure shown can, of course, be further broken down into its volume and margin components and, beyond this, any necessary explanations can be obtained by reference to the profit control on orders booked, which reveals the effect even of individual orders booked.

Controllable Selling Expenses/Controllable Production Costs—Here will be shown the total excess cost or saving against budget for such selling expenses and production costs as can be controlled on a day-to-day or week-to-week basis. Again, this will be merely the summary of figures already known through their control in this way. Any further

explanations required can thus be readily supplied by reference to the appropriate expense or cost control statement.

Administration and other costs—Under this heading will be reflected the deviation from forecast for all other costs, most of which are not controllable from day-to-day but only by periodic (perhaps annual) review. If costs have been intelligently anticipated in the chart used for target purposes, there should be little adjustment necessary here.

The analysis could give more detail, if significant. Additional sales volume and sales margin might be shown separately. Reductions below list price could be shown as a further sub-division of the sales margin deviation, if important. Special allowances to customers could also be spot-lighted, if material. Controllable administration costs could be shown separately, if the fluctuations in items which were controllable on a day-to-day or week-to-week basis, were material in amount.

Stock valuation basis would be a legitimate analysis heading if the stock valuation used for financial accounts purposes was so conservative as to give materially increased profits in periods during which stocks are being liquidated, and, correspondingly, reduced profits in periods during which they are being built up. This would be significant, however, only to the extent to which there were fluctuations in the level of stocks. If the financial basis approximated to capacity works cost, there would, again, be no deviation in this respect, even if stocks did fluctuate, since the method of forecasting assumes that all administration, selling and unrecovered fixed works costs (as indicated by Exhibit 8) are being recovered against current sales. A comparison of stock values on the basis of capacity works cost with the financial valuation would, however, give the deviation in this respect, if any.

Many other useful analysis headings will no doubt suggest themselves, but the criterion should be whether or not the deviations due to any given cause are sufficiently material to justify its segregation. This must obviously depend on the nature of the business and the aspects which are currently vital.

A Road Out of the Woods

The many aspects of the profit situation of a company, and the changes in and changing importance of these parts of the total picture, sometimes render the most painstaking accounting analysis useless to management. Detail in schedules and recomputation for altered situations may result only in confusion, inaccuracy, or—at best—delay. A compact and primarily graphic tool, on the other hand, has greater promise. It is with this thought that the procedure here expounded has been offered.

A French Application Of Budgeting For Cost Control

by JEAN-MARC KALTENBACH

General Secretary, Controller and Partner of a Group of French Industrial and Commercial Companies

A system of costing for control during the year is here described as applied in a small group of French companies. It rests on standard costs and emphasizes monthly scrutiny of spending and scheduled-against-actual volume differences. It utilizes distribution to products and sections of forecast indirect expenses, following forecasting of sales for the year, on the basis of rates established, and later comparisons along the same lines.

OUR SYSTEM IS NOW IN OPERATION and, once the "running in" period is over, we shall have in hand a matchless tool of management which we already find most useful. It is the object of this study to show how valuable the system is, why we have chosen it, and how it works.

Two Selling Companies and One Producing Company

We have two commercial (selling) companies (Insecticides Geigy, and Société Elekal), and an industrial company, (Société Poitevine de Conditionnement).

One of the commercial companies (subsidiary company of J. R. Geigy S.A. in Basle, originators of DDT) distributes, in French domestic and overseas territories, insecticides in which DDT is employed as a basic constituent, and a rodenticide. The other distributes deodorants in which chlorophyll is employed as a basic constituent. The industrial company manufactures and packages the products distributed by the commercial companies. It also manufactures and packages products for companies not connected with the group, to reduce the overhead costs borne by the companies of the group. The products involved are packaged as powders, liquids, emulsions and aerosol bombs. Insecticides Geigy and Société Elekal have common commercial departments, each of these companies taking its actual share of expenses according to a settled system of segregation. Their normal networks of distribution include wholesalers, chain-stores, chemist drugstores and hardware retailers. A range of products is also sold at industrial level to direct users, such as ministries, factories, etc. Lastly, a net work of sublicensees buys DDT active raw material which is used

as a basic product for the manufacture of the insecticides sold by these firms under their own mark.

Home and overseas territories are covered by a network of completely independent general dealers who buy products and who assure distribution in their own districts. These dealers, who are often very important companies, thus add our products to their own range of items and, in so doing, reduce their unit distribution expenses. We have one "inspector" for, on an average, contacts with every three dealers. He maintains communication between Paris and the dealers and he supervises the distribution undertaken by the dealers' salesmen. The districts of Paris and Britanny are directly prospected by our own salesmen and inspectors.

The industrial plant of Société Poitevine de Conditionement, which is located near Poitiers (Vienne), manufactures, packages, stores, and dispatches the products mentioned above in containers ranging from 50 gram bags to 200 litre drums. Our plant is equipped with mills and mixers. Packaging, filling and packing have been standardized. We have modern handling equipment and a chemical laboratory for analysis. In conducting the contract packaging and processing, our plant works for third-party accounts, such as soap manufacturers, fertilizer manufacturers, etc. . . . or other firms which may have manufacturing or packaging problems they are unable to solve by themselves.

The number of people working for our three companies is under 200. The commercial companies are in with a Swiss company and an American company to which they pay royalties in return for exclusive licenses they have been granted by the same. On the whole, administrative, technical and commercial organization has been carried as far as possible, considering the variety of products which can be manufactured and distributed and the various interests involved, and considering that it is necessary to set prices lower than those of competitors. All purchases are made by one purchasing department from the industrial compaiy, but the stocks belong to each commercial company individually. Fulfilment of the orders received by the group is the full responsibility of the commercial department. We have an administrative department to complete our general organization.

Essentials of the Cost System

We had a system providing for segregation of costs only in a limited way. Practically all of our fixed expenses were allocated on a French Francs basis, since labor was the most important cost element. Personnel reductions result-

ing from improved efficiency indicated that this was not satisfactory. Our system was incomplete, complicated, and inaccurate and, hence, unsatisfactory to the accountants who prepared the figures and the operating men who used them. Cost accounting inadequacies also resulted in failing to get important orders on which bids were placed. These shortcomings led us to re-examine the problem completely and rebuild the cost system on a different basis. A system of cost accounting has been worked out which involves permanent inventory-taking, stock sheets, manufacturing order forms, manufacturing standards for every product, labor planning for workshops, standard prices, sales forecasts, stock-handling system, etc. Considering the many problems raised by our various products and our various companies, we could hope to have a clear idea of our manufacturing and distributing costs and attain our first goal only by distributing as far as possible all the cost elements of our enterprise and by segregating them by individual products in accordance with a number of simple rules. However, even more essential were comparisons between what is and what should be. This is what led us to study more thoroughly standards, sales forecasts and the budget. Those three elements became the basis of the whole system.

The thing which interests us most is the quickness with which the information is given, even if it is not absolutely accurate, and chiefly what appears to be abnormal in the administration of the firm, rather than what is normal. Hence the progressive disappearing of the notion of cost price, which is replaced by that of the differences between actual prices and standard prices.

The main responsibility of the cost accounting department is not to re-calculate indefinitely the cost price of the same product. It must control whether everybody does or does not carry out budget, see that standards are not gone beyond, and chiefly it must find out why such and such abnormality has shown up.

In order to help management fix the general policy of the firm and to remedy insufficient internal connections between accountants and technicians, we have been led to borrow from the Americans the Controller whose job is to ensure connection between the various departments, to inform management of how these departments work, to see which are the best suitable methods regarding the goals to be attained and to organize administrative and accounting departments, in order that these methods be applied.

Our new system highlights more than ever the importance in a firm of the sales department, on which all the other departments rely, whether it be the factory, the purchasing department or the administrative departments.

The sales departments set up forecasts and as these forecasts are the basis

of the welfare of the company for the year to some, and involve implications respecting new immobilizations, equipment being purchased, employees being hired, etc.

Forecasting Receipts and Expenses

As the whole system is based on comparing theoretical elements with practical elements, our first aim has been to determine as exactly as possible these theoretical elements by breaking them down in as many pieces as possible. Receipts and expenses exist in all firms and the former exceeding the latter determines the profit. So, first of all, we set our general receipts and expenses forecasts for the year to come.

The receipts forecasts include sales forecasts for each department, each item and each month, in quantity and value, which forecasts we ask the commercial departments to set up. These sales forecasts help us determine: the number of labor hours to be anticipated (hence, the personnel of the plant), the coefficient of service of the equipment, the purchases of material to be allowed for, all the variable production and distribution costs, etc.

Expense forecasts are set up by the management and the accounting department. These forecasts are first established for the whole year and then distributed according to the existing production and distribution sections. These sections are responsibility centers whose costs and activity are followed up separately.

We segregate expenses by the various sections and take into consideration what we have learned in the previous years, in order to determine the importance of every overhead heading. We thus work up a large table which shows all the forecast expenses for the group of firms, these expenses being divided into manufacturing, distribution and overhead fixed and direct expenses, fixed expenses are applied to the various sections according to certain rules of charging (direct charging, equipment, installed power, profits, time spent at the factory on manufacturing orders, or other basis).

A first comparison between total receipts and total expenses enables us to see that our expense forecasts fit with our receipt forecasts and that the difference constitutes a normal excess of receipts for the enterprise. It is by no means simple to arrive at this result, especially if one thinks of the various problems to be solved as we advance on and on in the compilation process (Paris Agency — price of DDT — inter-company invoicing, equipment to be purchased, etc. . . .).

As our entire system rests on the sales forecasts made by the commercial companies, it is absolutely necessary that these be first set up by the sales department heads, according to their commercial policy for the financial year to come, which policy has been studied together with top management and takes into consideration the results of the past financial year. To this idea of sales forecasts has been added that of expense forecasts, also by department heads, but only of the expenses which they may affect. This obliges the sales department head to forecast his policy and to take account of the many items as regards personnel expenses, taxes, commissions, discounts or reductions, etc., for which he is directly responsible. Once these budgets have been set up, they are discussed first with the controller who helps and gives his advice. Top management allows or rejects forecasts.

Forecasting Factory Cost-Prices

When forecasts pertaining to total receipts and expenses have been agreed to, the next problem to be solved is that of the most accurate distribution of all of the forecast expenses to the items whose sale has been anticipated for the next campaign, since each product must be charged only with the costs concerning it. The elements which are a part of the factory price of any product are raw materials and packages, production direct expenses (labor, power) and production fixed expenses (factory overhead).

Quantities of materials are governed by standards. This does not bring up any special accounting problem.

We charge directly to individual products salary direct expenses, social charges and power costs at factory's level in accordance with pre-established manufacturing standards. These standards depend on such known elements as time spent, number of items the sale of which is anticipated, quantity of materials entered in these standards, etc. For example, thanks to the standards, we know the total number of salary's hours to be anticipated for forecasts to be perfotmed. We know the power installed in each section, the time it will be working during the year and the cost of a kilowatt. The total of these costs for the year, divided by the number of hours to be anticipated, gives us a direct expenses rate. That is to say it gives the labor hour cost which will be charged on each item according to the standard time to be anticipated for its manufacture.

It is not so easy when fixed expenses have to be apportioned to sections and items. They are of three different kinds: fixed overhead expenses, fixed ex-

penses, on materials, manufacturing fixed expenses. Only a small part of these expenses can be charged directly to sections, and only charging directly all the costs in a firm on all the products would make it possible to set cost prices considered as exact. As this is impossible, we have had to select rules of segregation which are neither quite correct nor quite incorrect but, thanks to which, we strive to distribute judiciously and as accurately as possible all the fixed expenses to all of the sections and, afterwards, to the products passing through the sections.

Fixed overhead expenses include all such expenses which do not vary directly with factory production such as insurance, salaries, social charges, rents, amortizations, etc. To segregate salaries of the purchasing department, for example, we use purchases value + immobilizations, as these two categories of expenses depend essentially on the purchasing department.

Fixed expenses on materials include stocking, storage and handling expenses concerning rooms where materials are stored. For stocking expenses pertaining to finished products, we have chosen as the basis for segregation the effective floor-space of the finished products, that is, the number of stocking-boards for every type of product.

For manufacturing fixed expenses we have created production lines in every production and packaging section, namely lines common to several items and which we call sub-sections, to which costs will be distributed on the same bases. In this way, all the expenses pertaining to the room where bottles are stored will be charged only on the items using bottles. All the powder items will be charged with the DA manufacturing section expenses, but this section is itself divided into three sub-sections: powders manufacture, American mill, special mill. The costs of these will be distributed only to the products passing through them. To distribute manufacturing fixed expenses, we take into consideration, on one hand, all of the fixed expenses which will be incurred during the year and, on the other hand, we evaluate for each section, the time to be spent on the production line to meet the sales forecast for the year. By dividing one by the other, we come to a unit cost of manufacturing fixed expenses per item.

The algebraical total, per section, of the three types of factory fixed expenses mentioned above makes it possible to work out the total part of fixed expenses borne by each item and to know why owing to the bases chosen, such item bears "N" part of it and such other items N + 1 or N — 1. In this way, all of the fixed expenses are apportioned to all of the items entered in the sales forecasts. The amount of fixed expenses each item is charged with constitutes

the standard cost of factory fixed expenses, which, together with materials value and factory direct expenses, also discussed above, make up the factory cost price.

Forecasting Factory Cost Prices for New Products

Once distributing forecast annual expenses to present products is over, no change must be made. Otherwise we would have to re-plan all the annual preparatory work.

To set a forecasted price for a new product, we follow a procedure which can be summarized briefly. The forecast price department first asks the factory to let them know how long a "work-unit" of the product is to be on the production line, namely, how many cartons or drums will be manufactured or packaged in one hour under the best working conditions (this will be an approximate data since it concerns a new product). This will make it possible to apportion to the product the section manufacturing fixed expenses and the power quota (variable expenses). Besides, the factory will indicate the labor hourly time forecast, the number of hours or of portion of hours required for the workman to package or manufacture a work-unit, any possible manufacturing or packaging hazards being taken into account. This hourly time will make it possible to distribute the section variable costs (labor and social charges only). The purchasing department then lets the forcecast price department know materials costs. Once the forecast price department is possessed of all this information, it tries and finds in our range of items the one which (nature- and packaging-wide) is the most similar to the new product whose forecast price is required. For materials expense and general fixed expense, we also have resort to similar present products. The forecasted unit costs of the new product is then determined.

Forecasting Commercial Cost Prices

At distribution level, we find the same difference between fixed expenses and direct expenses. Here expenses are first distributed to the sales departments and then to products, which will make it possible to set later on, for every sales department, a separate working account, with determination of the balance point.

Distribution direct expenses include taxes, royalties and commissions which vary according to sales and are charged directly in percentage (taxes, royalties) or in absolute value (commissions, carriage expenses) on every product sold.

Distribution fixed expenses include all the head office expenses which do not

vary in direct relationship with sales. Among them are administrative expenses, salaries, office expenses, travelling and entertaining expenses, etc. Just as for factory costs, we try to apportion them, as far as possible, directly. For this purpose, sales departments heads' salaries and commercial departments employees' salaries, rents, post, telephone, telegraph expenses, are distributed among the following departments, as far as they can be:

1. Administrative department.
2. Commercial department (administration of sales).
3. Sales department.

The aggregate of expenses which could not be charged directly was charged by means of such bases as turnover, financial expenses, management salaries, e.g., amortizations, etc. At the next stage, we distribute the administrative department's expenses and the commercial department's to the four sales departments, this depending on the turnover of each of them or on the activity of the administrative departments and of the commercial department for these sales departments. Lastly, all of the fixed expenses being grouped in four departments we assign them to every product sold by the sales department, depending on new and latest bases, which are either the value, the commercial expenses already distributed, etc.

On this basis, then, commercial cost price forecast per item is the sum of factory forecast price and distribution fixed and direct expenses.

We compare the prices we arrive at with those of the tariff selling price in order to be sure that the former are lower. Lastly, we strike a balance and develop a working account representing fulfillment of the forecast.

Transfer of Costs with Sales; Direct Cost Performance

The forecasts must be taken into account and compared with actual performance, through monthly and cumulative difference sheets. The thing which interests us most is to explain what the differences are caused by, to see whether their total value, which is either negative or positive, is favorable to the enterprise, and, lastly, to take the abnormalities noticed every month into consideration for the months to come. We put in the background the idea of product cost price and emphasize differences between forecast and actual expenses. Cost price is a distorted concept as fixed expenses must be charged arbitrarily. However, general accounting takes into account every month for the inventory value that part of fixed expenses pertaining to each item, according to an agreed rate.

We do make use of the cost we call red price which corresponds to materials

value plus direct expenses. Every month, we keep a sheet, by product, of the actual unit cost of materials plus direct expenses, which shows time spent, variable expenses and materials expenses for the product involved for the whole month and also the standards corresponding to the same elements. We thus have a first tool of management at our disposal, especially relating to factory operations. Variable expenses and materials costs are "sold" every month to the commercial services pro rata of sales.

Factory fixed expenses are regarded as "sold" to the commercial departments at the beginning of the season. These departments discharge this debt according to their sales, on the basis of x francs per item (fixed expenses rate resulting from the general forecast budget set up according to commercial forecasts). At the end of the year, if forecasts have been fulfilled, the commercial departments will have kept to their engagement and the debt contracted at the beginning of the year will be cleared. If actual performance exceeds or is under forecasts, the commercial departments will collect the profit or bear the loss.

Fixed Expenses: Budget and Activity Differences

The distribution of actual fixed expenses to the various departments according to actual sales of the year is of great significance. There has already been described the manner in which forecast expenses are distributed to sales forecasts but, as actual performance is different from forecasts, it is necessary to know why a department of item has incurred more or less actual expenses than what had been originally forecast and to know, equally, the incidence it will have on the whole firm. Hence our study of differences in fixed expenses. These can be of two different kinds according to whether they concern differences in activity or differences in the budget.

Differences in the budget cover the difference between fixed expenses actually incurred and expenses expected to be incurred in each manufacturing and distributing section. Forecast expense for a month is the annual figure divided by twelve. We get actual expenses through the expenses distribution rate previously described as made up of rates for materials, manufacturing, and overhead fixed expenses but, instead of having only three accounts showing differences, we have fifteen of them, relating to each manufacturing and distributing section. Every month we examine the difference between forecast and actual performance in francs. The sections are held responsible for these differences.

DIFFERENCE SHEET (EXAMPLE OF MANUFACTURING ACTIVITY)

A	B	C	D	E	F	G	H
Actual expenses	Expected expenses	Actual activity	Expected activity	Difference in the budget B-A	Expected difference in activity	Actual difference in activity	Total differences
320	300	200	270	—20	—30	—70	—120

EXHIBIT 1

Differences in activity present a different problem. We will consider it first at the factory level. Suppose the plant expects to meet a sales requirement of 100 items during the month. It establishes its manufacturing planning for the sections involved, taking the stocks in consideration. It will need to process only 80 items if there are 20 on hand, these to be replaced in the course of the following month. In such a case, the forecast activity of the plant will be 80. Hence an expected difference in activity amounting to —20 will exist. If, in the course of that month, the plant manufactures only 50 items instead of 80 as was expected, there will be an actual difference in activity of —30, which the plant will have to account for. The plant has little influence on activity which is determined by sales, but it must not do more than what has been forecast and must have a stock exceeding what has been forecast by our two rules of stock composition:

1. Two months' sales for materials. 2. One month's for finished products.

The activity of the commercial department will be its sales. Its fixed expenses must be apportioned during the year in proportion to sales as forecast. Owing to the seasonal nature of the products, monthly variations will be expected, i.e. for instance, 8 instead of 10 in the first month, on forecast annual sales of 120. These variations result in the expected difference in activity which, in this case, would be —2, but, should the sales happen to drop to 5 instead of 8, there will be an actual difference in activity of 3. This shows an abnormality which must be accounted for.

These examples will indicate that we are interested only in the difference in the budget and in the actual difference in activity. On the other hand, the expected difference in activity will have to be examined by management only at beginning of the year when forecasts and planning are established, and this

expected difference in activity will have to be taken into account each month only to deduct it from the sum total of the differences noticed in the month.

Evaluating and Appraising the Differences

Taking the manufacturing sections first, let us suppose that a section of the factory is to manufacture in October 20 Items A and 10 Items B. The unit standard rate of fixed expenses for this section is Frs 10. Considering the various products to be manufactured by the factory in October in the other sections, the factory's planning covers the manufacture of only 17 Items A and 10 Items B, since it has enough in stock to meet sales and since the stocks will again be restored in November by processing products. As of October 1, the monthly sheet showing differences (Exhibit 1) will have only the entries in Columns B, D, and F, reflecting the franc value of the budgeted expenses (Column B), seasonally different expenses (Column D) and value of this expected difference (Column F). If, during October, only 15 of Item A and 5 of Item B were manufactured, a total of 20 and if the actual fixed expenses were 320 francs, the remaining columns of Exhibit 1 could be filled in.

Looking at Column E, we notice that actual expenses exceed expected expenses by 20. This means that the factory did not stick to forecasts either due to bad management or because it has had to pay that month for an unexpected expense or for a "shifted one" as regards date of payment. In any event, an abnormality has shown up to which the controller will draw the attention of the factory, and the factory will have to furnish top management with explanations. The expected difference in activity of —30, appearing in Column F, must not be taken into consideration as regards explanation of the differences. It is, in some way, the forecastable part of the abnormality noticed as of the end of the month. As to actual difference in activity of —70, disclosed in Column G, the factory has not fulfilled its manufacturing forecasts. There must be some explainable reason for this. It can be either a machine failure which means that the workshop had to stop working, or the labor of the section was transferred to another section, etc.

Turning now to the differences relating to distributing sections, let us suppose that a commercial department expects to sell in October 400 cartons of various products, with a unit rate of fixed expenses amounting to 10 francs, that is: 400 × 10 = frs 4.000 of fixed expenses, which are expected to be recovered during the month. As expected expenses correspond to $\frac{1}{12}$ of the expenses, the forcast rate for the year is 3.000. Considering that a greater quantity of these products is sold in October than in other months, the fore-

DIFFERENCE SHEET (EXAMPLE OF DISTRIBUTING ACTIVITY)

A	B	C	D	E	F	G	H
Actual expenses	Expected expenses	Actual activity	Expected activity	Difference in the budget B-A	Expected difference in activity D-B	Actual difference in activity C-D	Total differences.
3.500	3.000	3.300	4.000	—500	+1.000	—700	—200

EXHIBIT 2

casted difference in activity thus comes to 4.000 — 3.000 = + 1.000, right at the beginning. During the month, actual performance was as follows: expenses actual incurred = 3.500 — actual sales = 330 cartons, which made it possible to recover 3.300 frs. The difference sheet will be as in Exhibit 2.

On examining it, the two following points, both equally ominous, will be noticed:

1. Actual sales have gone beyond the monthly average and are lower than the forecasts, hence an actual difference in activity of —700.
2. Actual expenses are higher than forecast expenses by 500, hence a difference in the budget of —500.

In such a case, it appears advisable to examine thoroughly the various differences, not just what they amount to in all, because the expected difference in activity of + 1.000, which lessens the total difference and is due to the seasonal nature of the products will necessarily operate in an opposite way in another month of the year. This highlights still more the actual situation such as shown by the other differences.

During the year, department heads are given performance figures every month in terms of expenses and receipts, corresponding to the various headings of their budgets, i.e., only those about which they can do something. This information is furnished by the controller who is the only one to centralize all the information obtained from the cost accounting section. The Controller, therefore, plays a most important part, both as an adviser regarding the setting up of the budgets, and as a critical commentator on the results. He must know the organization of the group of companies perfectly well, show common sense, initiative and psychology, so that the inter-working of the various budgets will be satisfactory. Chiefly he must convince the responsible persons of the necessity for coming as near to satisfactory performance as possible. This in everybody's interest.

The Summing Up

The final stage of the cost accounting system is setting up and interpreting the results attained as regards the group of companies and also all individual sales departments to which all company expenses have been finally distributed. At this stage, and at previous stages as well, we first have documents showing forecasts and then documents showing achievements resulting from actual figures.

As of the beginning of each financial year, a forecast working account is set up for the companies of the group in the whole, then for every sales department. These accounts, which are based on the forecast receipts and expenses, make it possible to anticipate, for every sales department, the results it will attain during the year. They enable us to strike a forecast balance sheet. Still on a forecasted basis, the break-even point of the group is determined and for the individual sales departments as well. The break-even point of the sales agencies is also determined. Every month, the accounting services make out:

1. **A table showing expense distribution to all the departments of the group, these expenses being the charges actually incurred which are compared, for each department, with the forecast charges, thereby showing the differences in budget and activity.**

2. **A general table of results which shows the profits or losses of the month relative to stocks and for every department: administrative, manufacturing, sales. These results are then compared with those of the general accounting department and all the differences noticed must be accounted for.**

The columns of the results table show the actual working account of the sales departments and these accounts appear as follows:

Charges: **Materials values of the products sold are shown under forecast standard price.**
Manufacturing fixed expenses of products sold, shown as 1/12 of the annual total of their forecast standard value.
Administrative fixed expenses, shown similarly.
Sales expenses actually incurred by the sales departments.
Receipts: **Actual sales of the month.**

The difference between charges and receipts gives the positive or negative result of the month. We always have to keep a forecast element in the working account because the exact monthly distribution of manufacturing fixed expenses, administrative fixed expenses and materials values would oblige us every time to re-distribute all the expenses to all the products, such as it was done at the beginning of the campaign, and this is not easy work. In order to avoid any loss of time, we found it better to have some forecast elements entered in the working account, but, at the same time to control the differences by scheduling them.

Monthly results such as those shown on the results table, are then compared

with forecast results set up as of beginning of the year. They are then cumulated every month (actual and forecast) with those of the previous months, so that, as of end of year, it is possible to compare actual working accounts with forecast working accounts, for the whole group. These elements will enable us to strike the annual balance sheet.

Once this information is collected, management is presented with it every year by the controller in the form of a general document, together with a short explanatory report covering differences and results noticed.

Extended Period of Indoctrination Needed

Our system is beginning to work. However, it will require a long running-in period, both for the departments which are bound to use it and for management which will draw results and information from it for the future, if its full control and management tool value is to be realized. It is obvious that our system was not perfect right at the beginning and that many an improvement will have to be made which will make it possible, later, to come nearer to the truth. Nevertheless, the basic principles are expressed in its initial installation and it can be said that the decisions taken have been taken with common sense.

All the departments are interested in the system—sales department, factory administrative services, etc., this being due to the incidence it has on product prices and department cost determination. Each department is to become later more autonomous than it has been up to now, as regards its management, with a receipt and expense budget of its own, and its own profit showing. This will not fail to give, progressively, a more important financial independence to the respective heads, and clarify their ideas on production cost, reduction of their departmental costs and payment of personnel.

During the three or four years to come, we shall have to endeavor to make the system work as well as possible without trying to alter it. It will become necessary for everyone to get the idea of the system firmly fixed in mind and to try to draw from it the information interesting him, as well as conclusions concerning the place of his activity in the company. Lastly, the system so organized must act as a link between the various departments and allow for a better co-ordination of everybody's efforts towards the goal to be attained.

EUROPEAN VIEW OF MANAGEMENT ACCOUNTANCY IN THE UNITED STATES

In the N.A.C.A. Bulletin issues of February and March 1951, there were reprinted two excerpts from the report of the British "team" which had been sent to the United States by the Anglo-American Council on Productivity. These excerpts related to American industrial accounting practice. As of similar relevance, there is reprinted here from The Cost Accountant, *December 1953, a report of a meeting under the auspices of the Institute of Cost and Works Accountants (England) reflecting not only the visit of the "team" of the Anglo-American Council on Productivity but also the visits of two subsequent "teams" which crossed the water, one from France and the other sponsored by the Organization for European Economic Cooperation. The text of the meeting report gives a composite view of reaction across the Atlantic to the status and use of industrial accounting found to prevail here.*

"WHAT MAKES MANAGEMENT ACCOUNTING effective in the U.S.A.?" was the theme of a public meeting held by the Institute of Cost and Works Accountants, on October 22, 1953. The meeting was held at London, and attracted an audience of nearly 600 people.

The discussion was based on the reports of three teams which visited America to study management accountancy methods over there. One of these was British (the team sent by the Anglo-American Council on Productivity), one French, and one European, the latter being sponsored by the Organization for European Economic Co-operation, and its members drawn from eleven different countries—Belgium, Britain, Denmark, France, Greece, Ireland, Luxembourg, the Netherlands, Norway, Sweden, and Turkey.

The leader of the European team was Mr. Ronald Parker, C.A., Finance Director of the Scottish Division of the National Coal Board. He was one of the principal speakers at the meeting along with M. Paul Francin, a French delegate in the European team, M. Francois-M. Richard, joint leader of the French team; Mr. Ian T. Morrow, C.A., F.C.W.A., leader of the British team; Mr. John Craig, C.A., a member of the British team, and Mr. Stanley J. D. Berger, M.C., F.C.I.S. (Director of the Institute), Secretary of the British team.

After the Chairman had explained the object of the meeting and introduced the speakers, Mr. Parker opened the discussion, saying that a few days beforehand he had had the pleasure of listening to a talk by Sir Ewart Smith, a director of Imperial Chemical Industries and a member of the British Productivity Council.

"I was impressed — perhaps shocked would be a better word—by what he had to say regarding the relative rate of increase in productivity in Great Britain and America," declared Mr. Parker.

Briefly the position appeared to be that during the 1920's and 1930's the yearly output of each man had increased at about the rate of 3 per cent per annum compound in the States and about 1½ per cent per annum in Great Britain. But since the war, the evidence indicated that the rate of increase in America had increased even more, relative to the rate of increase

in Great Britain, so that the actual difference was now alarmingly wide.

* * *

That this was in fact the position was supported by the evidence of three completely independent teams who visited America in the last three years to study various facets of their accounting practices and of the uses which American industry made of them.

In all, these teams comprised about sixty men who collectively had a reasonably wide knowledge of British and Continental industry, and each team was unanimous in the view that while there were only minor differences in the theory and application of cost accounting practices in America and Europe, there was a great difference in the extent to which American industry made use of management accountancy. Indeed, the strong impression was that management, from foreman to president, appreciated and welcomed the assistance which the industrial accountant could give and themselves gave willingly the co-operation and confidence without which no cost system can be of value. The accountant and his work were not suffered—they were enjoyed!

The Institute of Cost and Works Accountants had sponsored this meeting so as to bring on to a common platform members of each of the three teams to which he had referred, and it was hoped by public discussion to help to clarify in some small measure the problem of "What makes management accounting so effective in the United States of America?"

The meeting then proceeded to consider the subject under four main heads:—

(a) the relationship between organization and cost accounting, and between management and cost accounting;

(b) the influence of the controller and controllership;

(c) the use made of budgets;

(d) principles and systems.

* * *

Professor van der Schroeff, a Dutch member of the European team, was to have been a speaker on the first subject, but Mr. Parker deputised for him, using his notes. In the Professor's view the primary reason for the effectiveness of management accountancy in the United States was the attitude of American management towards costs and costing, whose purpose was not thought of as being in the main to try to find out the price of the product—that was regarded as being fixed by competition. Management must make the article at a cost below the market price, and the purpose of the cost system was to reduce the cost itself. The test of the effectiveness of the cost accountant was his ability to help management to do this. They were therefore far less interested in what the costs were than in what they ought to be.

The second speaker on this aspect was Mr. Ian T. Morrow, who commented upon what he called "the absence of the N.C.O. class of management" in the U.S.A. It appeared to be much more usual than in this country for senior management to be recruited from foreman level, and it was also quite normal for a young graduate to take an assistant foreman's or assistant manager's job, regarding this as the proper step towards higher management. There was also a much closer personal relationship between management and accounting people and work-people, and those on the shop floor liked and respected the accounting staff.

M. Richard opened the discussion on controllership, which he said was an American development. The controller was the

interpreter of figures, a member of higher management, who had equal status with other top managers. His job was management of the accountancy side—accounts, cash, statistics—and accountancy for management, which included reports for all levels of management from the Board to the foreman concerning budgeting, profit planning and control, price policy, etc.

The controller had arrived because of the complexities of modern industry. M. Richard saw the need for the development of the function of controllership in European industry—a man part specialist, part manager, versed in the practice of management accountancy, with an understanding of management problems and technical processes.

M. Richard was followed by Mr. Berger. He spoke as an observer, and said his accounting colleagues would confirm that one of the Management Accounting Team's main discoveries was that the Americans had nothing new to teach us in the way of accounting techniques; the team had seen nothing which was not known and practised in the best organized firms in this country. But unfortunately those firms were a minority, whereas in the U.S.A. cost consciousness existed amongst industry generally. Enthusiasm was genuine, to the extent that often the cost accountant or controller did not have to go to the foreman and tell his costs—he would come to the cost office to find out.

The first speaker on the use of budgets was M. Francin. The budget, he said, represented an aim to attain, similar to bogey in golf.

Budgets served to make people cost conscious, for whilst budgeting was an accountancy technique its importance was in its psychological influence. Budgeting forced industry to plan its operation—it was an instrument of management control facilitating the delegation of authority.

Among points arising in budgeting, the speaker referred to sales budgets, which focused attention on the contribution made by individual products or service to the company's revenues, to budgets at shop floor level, which fixed and measured responsibilities, and to the master budget for top management, a study of which facilitated change in policy if the results suggested such a course.

It was the controller's duty to tell his Board of the costs of any alternative courses of action and the costs of *not* pursuing certain courses of action.

Mr. Craig said the American attitude of mind towards budgeting was one of the clearest examples of the difference between American and British industry. The American was prepared to "have a crack" at budgeting even though there was a great deal of detailed work involved and he might not get the right answer. He was not afraid to look ahead and plan.

Mr. Craig believed that with a synthesis of the American conception of budgeting and the British attitude of "let's get by" we could give something of value to the western world.

Mr. Parker and Mr. Morrow were the speakers on principles and systems. Mr. Parker outlined the ways in which the organization of the National Association of Cost Accountants and the Controllers' Institute differed from that of professional bodies in this country, and went on to stress the importance of persuading management to take creative action when the cost system showed there was something wrong, which was the broad principle on which American practice was based.

Mr. Morrow spoke of the need for speed in the presentation of results, and of the methods of persuading management to use the results when produced.

Control Budgeting in Commercial Banks

By T. W. HARRIS

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That budgeting is fully applicable to banking operations is the thesis underlying this article, which deals concretely with the budgetary control process—resulting in deposit, investment, personnel and expense budgets—and its uses to bank management. Comparisons and contrasts with budgeting for control in industrial companies are introduced at many points. Emphasis on responsibility accounting through budgeting is noted.

MANY FACTORS HAVE GIVEN RISE to the necessity for the procedures and techniques of budgetary control in industry. The same factors make planning and control necessary in the business of banking. Increases in the number of products and services offered and in the number of business locations make effective control more difficult. Rapid corporate growth experienced by many business organizations in the last decade necessitates intelligent planning and control to coordinate the various functions of an organization during the growth period. Besides the variety of product and location, the very size and complexity of present-day business organizations require that management have better systems of control. Still further, looking outside of the business itself, rapidly changing economic conditions, business cycles, and seasonal variations in business activity, make forward planning of some kind of vital necessity. And, as if these considerations were not enough, requires that business management use every available procedure and technique to elmininate waste and inefficiency.

In both industry and banking, many tools and techniques have been developed to deal with these increasingly complex problems, including market research, forecasts, quality controls, methods planning, time and motion study, work measurement, statistical analyses, executive development programs, training programs, and many others. Numerous highly trained specialists have been developed to handle particular fields, such as finance, economics, public relations, advertising, personnel, methods, investment, taxes, and accounting, to name only a few. As related to such tools and techniques, budgetary control is not a substitute, nor is it a system which can replace the need for qualified experts. Rather, it is a method of planning the coordination of all other systems, procedures, techniques, and programs, and of controlling the efforts of all responsible personnel toward the primary objective of business management—a satisfactory profit.

The Objectives of Budgetary Control

Thus, the primary purpose of a system of budgetary control is to plan and establish a course of operations which will result in a satisfactory profit or return of investment. The goal is comprised of many separate objectives for functions, departments and individuals which, when consolidated, will produce the over-all objective. In addition to the fundamental profit motive of budgetary control, there are certain other basic objectives: These are:

1. To coordinate effort—One of the most important functions of budgetary control is to coordinate and correlate the operations of the various functions and departments of an organization, so that each bears the proper relationship to all others. If the operations of the various departments in an organization were all geared to different levels of activity, inefficiency and waste would obviously result. The over-all profit objective takes into account economic conditions and a forecast of future activity. The operations and efforts of all departments and functions are then coordinated in a program designed to attain the primary objective.

2. To fix responsibility—Budgetary control fixes in key personnel responsibility for segments of the budget. Executives, department managers, and supervisors know exactly what performance is expected of them. They can proceed to execute their individual assignments with minimum lost motion and wasted effort.

3. To control expense—Expense can be controlled only before it is incurred. Departmental budgets reveal where and how expenses will be incurred. Unnecessary expense can be eliminated. Essential expenses can be held to a minimum.

4. To develop sound policies of administration—The control of income, expense, and profit which results from a properly administered system of budgetary control, enables management to establish sound policies concerning sales, investments, operations, expenditures, and personnel. Management, with proper planning and control, knows exactly what the objective of its operations is and can formulate policies which will implement that plan, thus ensuring the success of the plan, itself.

5. To measure operating effectiveness—Periodic reports which compare actual operating results to a budget are an essential part of a program of budgetary control. Management is provided with an accurate gauge to measure the effectiveness of the performance of those who were charged with executing the plan of operations. Comparisons of budgeted and actual figures may reveal weak spots in the organization. They will show where corrective action may be necessary in order to achieve budget objectives and they may reveal areas in which changes in major policies are necessary. In this way, management is advised at the earliest possible date as to the effectiveness of the program which was originally planned. It is enabled to remedy situations which would ordinarily not be brought to its attention until a later date, when corrective action might be too late.

Sales Forecasting for Budgeting in Industry

In industry, the preparation of a budget begins with a sales forecast. A general business forecast which takes into account the business situation of the country as a whole, usually precedes a company sales forecast, because the best

of company sales forecasts, based on the most scientific techniques of market research for specific industries, products, and companies, may be grossly inaccurate due to a failure to foresee a major change in the general level of business activity.

Although it is recognized by economists that general business forecasting is the most difficult and speculative type of forecasting, it is regarded as being an essential prerequisite to successful sales forecasting and budgeting. How is a general business forecast made? It has been estimated that there are as many as 10,000 statistical series or indices which may be used in forecasting. It is obviously an impossibility to take into account such a tremendous number of factors. However, the set of national accounts known as the gross national product is now recognized as being the most inclusive measure of business activity, reflecting, as it does, the production of the entire labor force of the country. Since it does represent total business activity, a forecast of the gross national product is a forecast of general business conditions. Thus, business management is provided with a relatively simple method of forecasting, yet one which deals with the economy as a whole.

In industry, a company sales forecast, after taking into account general business conditions, must then also reflect a forecast for the industry in which it is engaged, the results of any market research which has been made, and an analysis of the company's sales outlets, sales force, and existing accounts. This becomes the basic budget to which all other operations are geared. The plans for the functions of selling, purchasing, manufacturing, research, and financing are all coordinated to the basic sales budget, and separate budgets for these functions and for their component departments are established. At this point it is possible, by consolidation of the sales or revenue budget with the expense budgets, to determine the overall profit objective.

Similar Approach to Forecasting Deposit Volume

Budget procedure in a bank should be exactly the same. A forecast based on a forecast of general business conditions is the first step. Such a forecast, on which a bank forecast may be based, may have its origin in any one of three sources:

1. It may be based on the published opinions of economists, interpreting the future trend of business.
2. It may be obtained from a practicing economist, retained on a consulting basis to forecast the general level of business activity, and to interpret the effects of such forecast on the organization's activity.
3. It may be prepared by someone on the bank staff—its economist, budget director, or financial officer, for example.

Forecasting for a bank immediately raises a controversy as to whether deposits or

investments constitute "sales" in the business of banking. (Neither of these two elements represent sales revenue—only interest does that—but they do represent activity). For the purposes of budgetary control in commercial banks, there is no question as to what constitutes activity. Deposits stand in the place of sales, and intelligent policies relative to investments cannot be determined until a basic budget for deposits has been established. The heavy demand for loans which has existed since 1950 proves this point. Almost any bank in the country can make all the loans it wishes to make. The only real limitation resides in the volume of funds available for investment, and this is determined by deposit volume. This is similar to the need of a manufacturer to limit production to what he can sell.

Technique of Deposits Budgeting; Functional Break-down

In forecasting deposits, banks are singularly fortunate in having sources of information available which make the job relatively easy. Deposit figures are available week by week for cities and Federal reserve districts, for country banks, reserve city banks and central reserve city banks, and for the country as a whole, through clearing house exchange of figures, Federal Reserve Bulletins and reports, and other sources. If the deposits of any one of these bank groups are charted week by week for several years, it will be found that the annual cycle of deposits maintains a remarkably similar pattern year after year. Taking into account current and forecast levels of general business activity, it is relatively simple for the bank sales forecaster to project trend lines of total deposits of the group of banks of which his bank is a member, following the normal seasonal deposit pattern of the past. In this process the historical record of the annual deposit cycle in the past determines the pattern of deposits and the general business forecast determines the deposit level.

Through this procedure, it is possible to make an accurate forecast of total bank deposits for the particular city or district of which an individual bank is a member. When the deposit level for the bank's area has been forecast, it is very easy to forecast the bank's own deposits. The ratio of the bank's average deposits to total average deposits in its area, for the period immediately preceding the budget period, can be determined exactly from historical records. This ratio, applied to the forecast of total deposits for the area, determines the bank's projected, proportionate share of deposits in that area. It is then recognized that an individual bank may chart its own deposits for a period of years to determine its normal cycle or pattern, and may then forecast its own deposits by relating a forecast of general business conditions to its own deposit cycle,

without the intermediate step of forecasting total deposits of all banks in its trade area. However, there are two very distinct advantages to the method of forecasting deposits of a group of banks:

1. **The total bank deposits of a city or district do not fluctuate as widely as do those of an individual bank. They adhere more closely to historical deposit patterns of past years. They are, therefore, easier to forecast than those of an individual bank. Deposit trends are more easily discernible.**

2. **The ratio of an individual bank's deposits to total deposits in its area provides a perfect measure of the bank's progress in successfully maintaining or improving its competitive position with other banks in its trade area.**

A bank deposit forecast prepared by this procedure contemplates that a bank will maintain its relative competitive position with other banks in its trade area. If bank management feels that maintaining such a position is a reasonable and desirable objective, then the deposit forecast may be approved as a deposit budget. If management believes that the bank may reasonably be expected to improve its competitive position and capture a greater proportion of the market, then the forecast should be increased to establish an objective which presents a more challenging goal than merely holding onto business already on the bank's books.

After an overall deposit system for the bank as a whole has been established, it is necessary to break it down into component budgets for functions, departments, and, in certain cases, for individuals. For example, an overall deposit budget might be broken down between the commercial and the savings functions. The budget for commercial deposits might be further broken down into separate budgets for local, state, and national divisions, in order that ultimate responsibility for achieving budget objectives may be fixed in members of the staff. This is responsibility accounting. Even though (which is unlikely) an overall budget be based on a forecast which subsequently proves to be precisely correct, departmental and functional budgets will be meaningless, if they are established inequitably as beteewn departments. In order that variances between actual and budget deposits be significant of good or bad performance, it is essential that they be fairly set up in the first instance.

Investment and Revenue Budgeting; Departmental Allocation

In an industrial company which directs its operations by a system of budgetary control, it is to the basic sales budget that all other operations of the organization are correlated. The sales budget is then consolidated with the various expense budgets to establish the overall profit objective. In a bank, an intermediate step is necessary to convert the deposit budget into revenue, because deposits must be converted into earning assets before revenue results. The invest-

ment budget is, therefore, a major element in bank budgeting, being nearly equal in importance to the deposit budget.

Earnings statements for the investment functions of a bank are of necessity expressed in terms of dollars of income and expense. Nearly all income reported in such statements consists of interest earned on loans and securities. The amount of such income is dependent on the dollar volume of investment principal and on the rates of return earned on investments. Budgets for securities, loan principal, and for their respective interest rates, must be considered before budgets of the consequent income. After investment budgets have been established, interest income budgets can be determined by simple arithmetic, i.e., budgeted rates of return are applied to the budgets for investment principal.

Many banks use a budget of funds or, as it is sometimes called, a conversion schedule, as a convenient medium to express investment policies, whether or not they attempt to control all operations through budgetary control. These are the schedules in which deposits are classified according to degree of vulnerability to withdrawal and are scheduled to be invested in earning assets, thus projecting an investment position which will produce maximum income and which will, at the same time, provide the necessary liquidity to service deposit activity.

The usual budget-of-funds procedure provides an excellent method of coordinating bank investment policies with a program of budgetary control. An established conversion schedule may be applied to deposit budgets which have been previously established, to automatically fix budgets for loans and securities. If the general business forecast indicates that loan budgets established in this manner cannot be attained because demand for loans will not be sufficient, then they should be reduced to levels which represent reasonable objectives and securities budgets should be correspondingly increased, so that the overall budget will provide for a full-invested position.

Budgets for interest rates should be based, in part, on the effective rates which are actually earned by the bank according to latest available figures, in part on the present and forecast prime rate, and in part on present and forecast competitive interest rates. A general rule to be followed in preparing budgets for loan principal and for loan interest rates is that the budget should emphasize improvement of interest rates as the objective when loan demand is high and should emphasize loan principal as the primary objective when loan demand is off, with interest rates then set at competitive levels. (It should be unnecessary to point out that no loan officer should permit his desire to meet budget objectives to influence his judgment concerning credit risks.)

Since one of the prime objectives of budgetary control is to fix responsibility for the attainment of budget objectives in departments and, hence, in responsible

personnel, it is necessary to break down these overall bank objectives into departmental budgets. In a great many cases, general ledger account classifications permit direct allocation of investment budgets to departments. For example, budgets of the various classifications of consumer credit loans become the budget for the consumer credit department. Budgets for the various classifications of mortgage loans become the budget for the mortgage loan department.

Many banks, however, maintain more than one department or division which makes commercial loans, in which case responsibility for the overall budget for commercial loans must be fixed in various divisions. Such allocations should be based on current departmental volume and interest rates, on business prospects for the types of business to which loan departments extend credit (manufacturing, mercantile, finance, shipping, etc.), and on geographical business location when that is a factor (national, state, or local). When more than one commercial loan department is maintained, the division of business territory is usually very definite, either by type of business or by geographical location, and allocation of the consolidated budget for commercial loans can be made on a logical and equitable basis.

Key to Expense Control: Personnel Budgets, Work Measurement

Expense in banks can best be controlled through control of personnel. Hence, just as deposit and investment budgeting precedes income budgeting, so personnel budgeting precedes expense budgeting. Salary expense, together with other expenses relating to salary—such as social security and pension expense—accounts for more than two-thirds of total controllable expense, excluding those expenses which relate to size of deposits, such as interest, F.D.I.C. insurance and deposit taxes. In addition, many other controllable expenses, such as occupancy, insurance, stationery, furniture and equipment, telephone, travel, and entertainment are related to salary expense or to the number of employees on the staff. It follows, therefore, that the best way to control expense in a bank is to control the number of people employed by the bank.

Personnel budgets are established by determining requisite personnel to staff each department. For production departments, such as bookkeeping, clearance, transit, teller, and all customer accounting departments, this can best be done by work measurement. In recognition of the growing effect of clerical costs on operating profit, many progressive corporations and banks have applied the basic time and motion study principles of Frank and Lillian Gilbreth and Frederick W. Taylor, as developed for factory work, to measure the work performance of clerical office workers. In banking, in particular, the clerical force constitutes

such a large part of the total staff that some form of work measurement to determine force requirements is virtually a prerequisite to budgetary control.

Budgets for personnel and salaries should be derived from a technique of accurately measuring work production. Elimination of overstaffing and inequitable job loading cannot be accomplished by basing present standards for personnel on past performance, which would only serve to perpetuate inefficiency. Work measurement is the technique of establishing time standards for repetitive operations in order to measure production. If time standards are established for all major operations or transactions of a department, then the production of that department can be measured by multiplying the standard time required for each operation by the number of operations of that type which were performed in a given accounting period. Conversely, knowing the number of operations of each kind which were performed, and the standard time required to perform them, it is possible to determine the personnel which should be necessary to process a given volume of activity.

This procedure, or a comparable one, is just as necessary to control of bank operations as are standard costs based on time standards to a system of budgetary control in industry. In production departments where time standards are not available or are not practicable or feasible, item counts of activity or some other measure of the volume of activity is usually available to determine requisite personnel. Activity and personnel for previous periods can be compared with present activity and personnel. The judgment and knowledge of supervisors and executive officers can enable them to determine requisite personnel with reasonable accuracy from available data. One good rule-of-thumb is that a department which never works overtime is overstaffed.

Whether force requirements for budgetary control purposes are determined by work measurement, volume statistics, judgment, or combinations of these methods, the budgets so determined should not be revised upward because of high rates of turnover, inexperienced personnel, incompetents, or "pensioners" who are only filling in time. Recognition of these situations should be given by supplying additional personnel to departments when necessary to keep customer service unimpaired. However, no budget provision for personnel or salaries should be made for overstaffing which results from such situations. A budget should not be used as a shield to hide these conditions, but rather should point them out. While this may appear to be inconsistent with the basic principle that budgets should be realistic, reasonable, and possible to achieve, it actually is not, since remedies are available for these situations, although they may not be effective in current budget periods.

Staff Departments Like to Grow

In considering personnel budgets for staff departments, bank management should be aware of the nature of such departments. These include such departments as business development, public relations, personnel, credit, legal, methods planning, audit, operating, guards, investment analysis, estate analysis, cost, and, last but not least, the budget department and the budget director himself. The functions of these departments are generally recognized as being necessary and desirable to the operation of a well-run bank. Nevertheless, their basic nature should be understood. The officer or manager of each such department is inclined to increase his own stature and importance by enlarging and expanding his own department's functions. From time to time, each one of them will write convincing and persuasive memorandum to bank management establishing the necessity for more employees in his department.

Periodically, bank management, through the medium of its system of budgetary control, should require that each of these department heads do the following:

1. Analyze the performance and accomplishments of his department in the period ended.
2. Outline the projects and functions which will be undertaken in the ensuing budget period.
3. Establish the necessity for each member of his staff in the forthcoming budget period.

No staff department should attain a size which is out of all proportion to its relative importance to the bank. The number of employees necessary to staff these departments is entirely a matter of judgment, and the judgment and decision should be that of the president and budget committee, rather than that of department heads.

After personnel requirements have been determined for all departments, salary expense budgets for the requisite work force are easily established.

Significant Variances Pre-Suppose a Sound Budget

The entire procedure of budget preparation is only a preliminary step in a program of budgetary control, but it is probably the most important single step in the entire program. Unless budget objectives are carefully and accurately prepared, variances between budget objectives and actual results will have no significance whatsoever and the entire program will be a failure. The budget is the foundation of budgetary control and it must be soundly constructed if real control of operations is to result.

In reporting to management, actual results from operations are shown in comparison to budget objectives. If a budget was carefully and accurately pre-

pared, variances between budget and actual are significant of good or bad performance. Reports for intermediate accounting periods provide management with a measure of the progress made toward the overall budget for the bank as a whole for a calendar year and enable management to take remedial action to help ensure the ultimate success of the program.

Not Management — But a Worthwhile Management Technique

The objective of all business enterprise is to secure a satisfactory profit from operations. Will a system of budgetary control make sure that a satisfactory margin of profit will be earned under all conditions, either in industry or in banking? The answer, obviously, is "no." No one program, procedure, or technique can ever ensure that a business organization will have satisfactory earnings. Good management is more important than any management technique.

In view of its limitations, is a program of budgetary control practical in a bank? It is just as practical as any other technique of management and probably offers considerably more benefit than most others. Methods planning, employee relations, public relations, work simplification, work measurement, and quality control are all difficult techniques and, actually, all are a part of budgetary control.

As a matter of fact, most large banks use many of the elements of budgetary control without attempting to coordinate them into a comprehensive system of control. Forecasts of deposits and investments, scientific or otherwise, are made by most banks. A conversion schedule is commonly used and universally recommended as an investment technique. Time and motion study has been applied to repetitive clerical operations to establish time standards which, in turn, are used for work measurement and to determine work force requirements. Nearly all large banks now have good cost accounting systems. A procedures or methods planning department was a rarity before World War II but is now regarded as being essential in large banks. The sum total of these various programs, procedures, and techniques nearly comprises a program of budgetary control. It lacks only a unifying master plan or budget, coupled with an administrative procedure, to constitute budgetary control.

Budgets are the eyes and ears of management and constitute a means of searching out weaknesses, exceptions, and irregularities in the operation of a business enterprise. Budgetary control is a technique which materially aids management in its unending task of seeking to improve operations and earnings.

Daily Cash Reports to Aid Control in Retailing

by DENNIS GORDON

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In many retail operations daily cash summaries may serve to control integrity of assets as well as the day-to-day progression of operations. This thesis is liberally illustrated by the text and numerous daily report forms. It is noted that cash receipts control, through suitable reporting, has relevance to control in manufacturing companies also.

DESPITE THE WIDESPREAD USE of daily records of cash received and disbursements by industrial and retailing firms, it is surprising to note how little has actually been written on the subject. The purpose of this article is to illustrate some of the different ways cash reports may be used. As these reports are characteristically prepared daily, they are important for the following reasons:

1. **To control cash—Close accounting over funds is necessary to catch mistakes and minimize peculations. Because cash is the most vulnerable of assets, there must be air-tight protection over cash receipts and disbursements.**
2. **To serve as a basic accounting record—The daily cash report is the basis for journal entries and summaries. It is therefore an integral part of the accounting system. By summarizing the daily cash reports, totals can be accumulated into weekly, monthly, and annual records of sales and cash disbursements.**
3. **To provide figure facts for management—Management needs daily information on cash sales and collections in order to take action immediately in situations requiring correction. Sales may be dropping or collections on charge sales may be slowing down. Management needs to know what is happening as soon as it happens. Moreover, financial planning and budgeting are helped by a knowledge of the current cash position.**
4. **To control purchases and inventory—Some companies are able to control inventories with the use of daily reports. The central office keeps a record of all shipments to a branch store or office. The daily cash report sent in by the branch includes a record of goods sold, by item or department. By deducting these sales, the central office knows what the branch should have on hand.**

The remainder of this article will reflect a variety of cash reporting procedures and forms. Each will be clearly seen to have the common objectives of protection of cash and usefulness to management.

Practice in Controlling Cash from Retail Sales

Where a large amount of business is done for cash, it is difficult to control every possibility of loss. Mistakes will happen, and they will not all be on the shortage side. Some cashiers will be tempted to pocket cash overages at the end of the day. Over a period of time cash shortages should equal cash overages. Therefore, if there are consistent shortages and few overages, something is

amiss. Protective practice varies somewhat, as is indicated in the paragraphs which immediately follow.

It is the general practice in retailing to deposit cash daily. In chain stores, the bank deposit slip is forwarded to the home office, together with the daily sales and cash report, paid bills, invoices, and other supporting data. Some chains forward the register tapes to the home office. One shoe chain saves the tapes, which are checked by the internal auditor. This chain feels it can check the cash through the inventory taken every four months by the internal auditor.

Account Form 248

DAILY SALES REPORT

Store_____ Date_____

REGISTER

Over_____ In Balance Yes____ No____ Short_____

Cash Sales_____ $_____

Refunds_____ $_____

Net Cash Sales_____ $_____

Budget Collections_____ $_____

Cash Plus Credit Collections $_____

Paid Outs and Shortages____ $_____

Total for Deposit_____ $_____

STAPLE REFUNDS AND PAID OUTS HERE

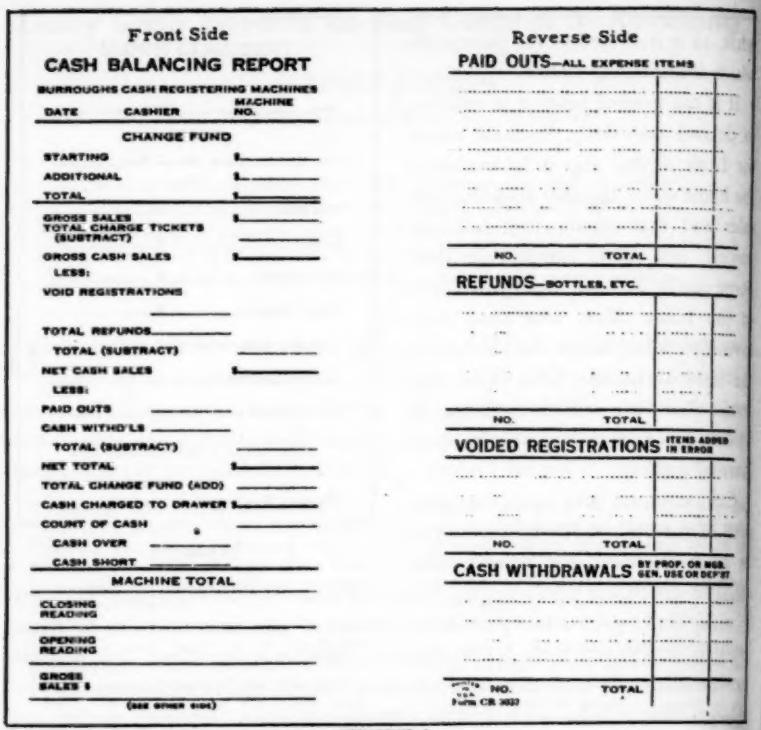
Manager's Signature_____

EXHIBIT 1

Cash sales are rung up in the presence of the customer, who thus serves as a check upon the cashier. This tends to discourage under-ringing a sale and pocketing the difference. Registers in many stores print a receipt with the amount of the sale stamped on it. Some registers accumulate totals by department. Thus, in a shoe chain, it is possible to accumulate the total sales of shoes, hose, rubbers, and miscellaneous sales including shoe polish. As a further protective measure, shopping services are widely used by the chain organizations to check whether the salesperson rings up the amount received. (These services also check the sales ability of the clerk.)

Although limited price variety stores use registers which do not print customer receipts, these stores do not depend upon the customer alone to check the amount of the sale. One chain has four checkers in a large store to see that the girls ring up the proper amount of the sale. As an additional step, at different times during the day, usually in the absence of the clerk, the cash in the drawer is compared with the register reading. In other stores, as for example a clothing chain, a sales slip is made out for each sale. The salesman brings the sales slip to the cashier who checks the price ticket on the merchandise with the sales slip. Each sales slip is numbered and must be accounted for. The total of the sales slips for the day must agree with the cash in the register.

The cashier should count his cash before preparing the daily report. This practice will insure the reporting of any cash shortages or overages.



Front Side

CASH BALANCING REPORT

BURROUGHS CASH REGISTERING MACHINES

DATE | CASHIER | MACHINE NO.

CHANGE FUND

STARTING $

ADDITIONAL $

TOTAL $

GROSS SALES $

TOTAL CHARGE TICKETS (SUBTRACT)

GROSS CASH SALES $

LESS:

VOID REGISTRATIONS

TOTAL REFUNDS

TOTAL (SUBTRACT)

NET CASH SALES $

LESS:

PAID OUTS

CASH WITHD'LS

TOTAL (SUBTRACT)

NET TOTAL $

TOTAL CHANGE FUND (ADD)

CASH CHARGED TO DRAWER $

COUNT OF CASH

CASH OVER

CASH SHORT

MACHINE TOTAL

CLOSING READING

OPENING READING

GROSS SALES $

(SEE OTHER SIDE)

Reverse Side

PAID OUTS—ALL EXPENSE ITEMS

NO. TOTAL

REFUNDS—BOTTLES, ETC.

NO. TOTAL

VOIDED REGISTRATIONS ITEMS ADDED IN ERROR

NO. TOTAL

CASH WITHDRAWALS BY PROP. OR MGR. GEN. USE OR DEPT

NO. TOTAL

Form CR 3037

EXHIBIT 2

Five Forms of Cash Reports

Daily cash reports range from the very simple to the complex. A simple form may be used to balance cash in a store with only one register. The more complex forms may summarize receipts from many registers and provide a detailed classification of disbursements. The number of cash registers, the need for sales statistics, whether a petty cash fund is used—all these factors must be considered in designing a form. A simple form used by a chain store is illustrated in The Daily Sales Report shown as Exhibit 1. The following information is recorded:

1. Cash on hand from the previous day, plus
2. Receipts as recorded by the cash register, less
3. Cash payments and bank deposits, equals
4. Cash on hand at the end of the day.

The chain which uses this form requires that duplicate deposit slips be mailed with the report daily and that all receipts for paid-outs be sent in with a weekly

DAILY CASH REPORT

STORE _____ DATE _____

CASH ON HAND		DAILY BANK BALANCE	
Cash on hand, beginning of day		Balance, beginning of day	
Cash received on taxable sales		BANK DEPOSIT	
Cash received on non-taxable sales		TOTAL	
Other cash received - Explain:		SUBTRACT - Checks written	
TOTAL		Balance, end of day	
SUBTRACT - BANK DEPOSIT			
BALANCE			
SUBTRACT - CASH PAID OUT			
Cash on hand, end of day			

CASH PAID OUT

PAID TO	FOR	NO.	AMOUNT

CHECKS ISSUED

CK. NO.	PAID TO	FOR	GROSS	DISCOUNT	NET AMOUNT

SALARIES PAID

PAID TO	GROSS	.2% SS	W/H Tax	NET AMOUNT

EXHIBIT 3

summary. Many companies prefer a more detailed form, to account for cash short or over and to itemize paid-outs, refunds, items added in error, and cash withdrawals. The Cash Balancing Report in Exhibit 2 illustrates a form designed by a manufacturer of cash registers to be used in balancing out cash, as well as to record the basic information of cash paid outs and withdrawals.

Accountants who provide a bookkeeping service to clients might prefer a form like Exhibit 3, Daily Cash Report, which accounts for bank deposits and checks, as well as cash on hand. The proprietor records cash collected and paid out and lists the checks issued as well as salaries paid. It is a simple matter for the accountant to summarize this information. In this case careful attention to the design of the form makes it possible to classify the receipts and disbursements as part of the cash balancing operation. When this is done, the summarizing of the daily information into weekly and monthly totals can be accomplished more quickly.

An interesting application of this principle appears in the Daily Report presented as Exhibit 4. This is a daily report used by a service store (a drug store

DAILY REPORT

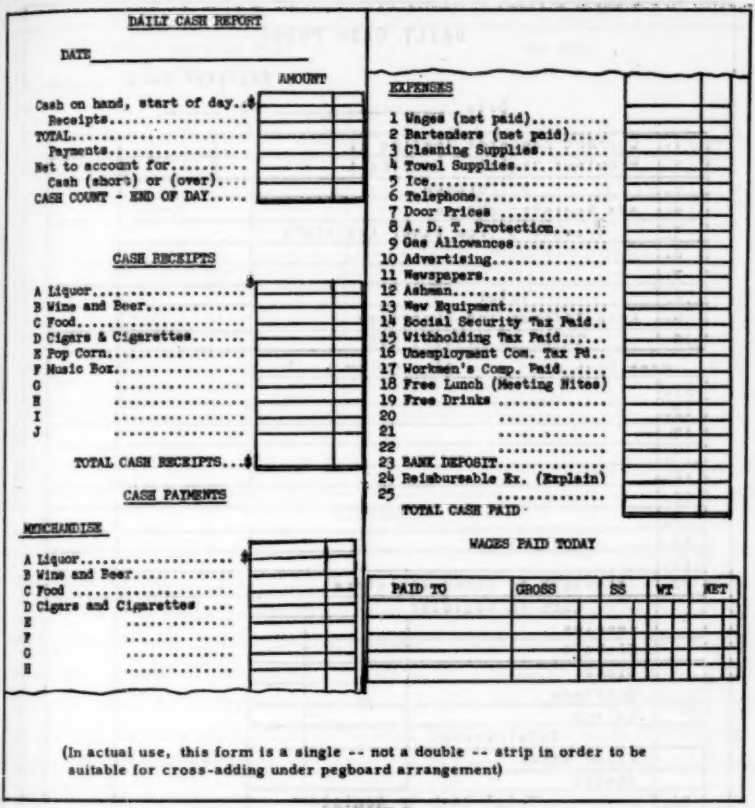
Date _____

Cash on Hand Beginning of Day			$
Cash Received for Day			
Sales - Non-Taxable	$		
Sales - Taxable			
Sales Tax Collected			
Miscellaneous Income			
Less Cash Paid Out			
Purchases - Taxable Merchandise	$		
Purchases - Cigarettes			
Purchases - Newspapers			
Purchases - Candies			
Purchases - Baby Food			
Purchases - Bread, Milk			
Laundry & Cleaning			
Advertising			
Repairs & Maintenance			
Delivery Expense			
Wages (Net)			
Personal Withdrawal			
Cash Short or Over			
Photo Development			
Store Supplies			
Total Cash Paid Out for the Day	$		$
Cash left after Cash Paid Outs			$
Deposited in Bank End of Day			$
Cash on Hand End of Day (After Deposit)			$

EXHIBIT 4

without a prescription department). The cash reconciliation and analysis is printed on an envelope. Each day, the cash register tapes, paid-out slips, and invoices are filed inside the envelope. Much writing is saved because the daily totals can be listed in a monthly summary of cash receipts and disbursements. Should there be a question about an individual amount, the accountant or proprietor can go back to the envelope and draw out the receipt or invoice.

Time can also be saved in recording daily cash reports by using summary spread or "strip" forms and a pegboard. By placing the reports side by side, totals for a week or other period can be added without rewriting or listing. An example of this idea appears in Exhibit 5, used by the canteen of a veteran's



DAILY CASH REPORT

DATE _____

	AMOUNT
Cash on hand, start of day..$	
Receipts.....	
TOTAL.....	
Payments.....	
Net to account for.....	
Cash (shorts) or (over)....	
CASH COUNT - END OF DAY.....	

CASH RECEIPTS

	$
A Liquor.....	
B Wine and Beer.....	
C Food.....	
D Cigars & Cigarettes.....	
E Pop Corn.....	
F Music Box.....	
G	
H	
I	
J	
TOTAL CASH RECEIPTS...$	

CASH PAYMENTS

MERCHANDISE

	$
A Liquor.....	
B Wine and Beer.....	
C Food	
D Cigars and Cigarettes	
E	
F	
G	
H	

EXPENSES

1 Wages (net paid).....	
2 Bartenders (net paid).....	
3 Cleaning Supplies.....	
4 Towel Supplies.....	
5 Ice.....	
6 Telephone.....	
7 Door Prices	
8 A. D. T. Protection.....	
9 Gas Allowances.....	
10 Advertising.....	
11 Newspapers.....	
12 Ashman.....	
13 New Equipment.....	
14 Social Security Tax Paid..	
15 Withholding Tax Paid.....	
16 Unemployment Com. Tax Pd..	
17 Workmen's Comp. Paid.....	
18 Free Lunch (Meeting Nites)	
19 Free Drinks	
20	
21	
22	
23 BANK DEPOSIT.....	
24 Reimbursable Ex. (Explain)	
25	
TOTAL CASH PAID	

WAGES PAID TODAY

PAID TO	GROSS	SS	WT	NET

(In actual use, this form is a single -- not a double -- strip in order to be suitable for cross-adding under pegboard arrangement)

EXHIBIT 5

organization. This form first requires a check of the cash receipts and disbursements, to determine any cash discrepancies. Then the cash receipts and disbursements are classified. The cash register used by this organization does not accumulate separate totals by type of sale but does print a letter on the tape inside the machine. Each letter indicates a type of sale, so the tape must be readded by symbol in order to prepare a sales analysis. The classification of disbursements is relatively simple. There must be a receipted bill or petty cash slip for each amount paid out. These are listed by object of expenditure. The auditor can then check the analysis and accumulate totals.

Examples of a Grocery Chain, Variety Store, Jeweler

The cash control system for a retail grocery chain must provide for the

DAILY CASH PROOF

Register No. _____

Date _____ 19 ____

1.	Current Register Reading			
2.	Previous Register Reading			
3.	Difference			
4.	Add Register Change			
5.	Transfers from Other Registers			
6.				
7.				
8.	Total			
9.	Less Refunds and Overrings			
10.	TOTAL TO ACCOUNT FOR			
	Cash Pick Ups Sign Below			
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.	Transfers to Other Registers			
	Cash in Register			
	Pennies			
	Nickels			
	Dimes			
	Quarters			
	Halves			
	Total Coins			
	Paper Money			
	Checks			
21.	Total Cash in Register			
22.	Cash Paid Outs			
23.	Coupons			
24.	Welfare Sales			
25.	Charge Sales			
26.				
27.	TOTAL ACCOUNTED FOR			
28.	Difference Between Line 10 and Line 27	Line 27 Short Line 27 Over		

I Hereby Certify That the Above Cash Proof is Correct

Signature _____

PLACE STORE STAMP ON BACK

EXHIBIT 6

REFUND AND ERROR SHEET

STORE STAMP

See instructions on other side

Week ending _____ 19

REFUNDS AND OVERRINGS

GROCERY				GROCERY				MEAT				PRODUCE				TAX		
DATE	ITEM	AMOUNT	CLERKS' INITIALS	DATE	ITEM	AMOUNT	CLERKS' INITIALS	DATE	AMOUNT		CLERKS' INITIALS	DATE	AMOUNT	CLERKS' INITIALS	DATE	AMOUNT		CLERKS' INITIALS

DEPARTMENTAL ERRORS (For Self-Service Stores Only)

GROCERY		MEAT		PRODUCE		TAX	
+	–	+	–	+	–	+	–

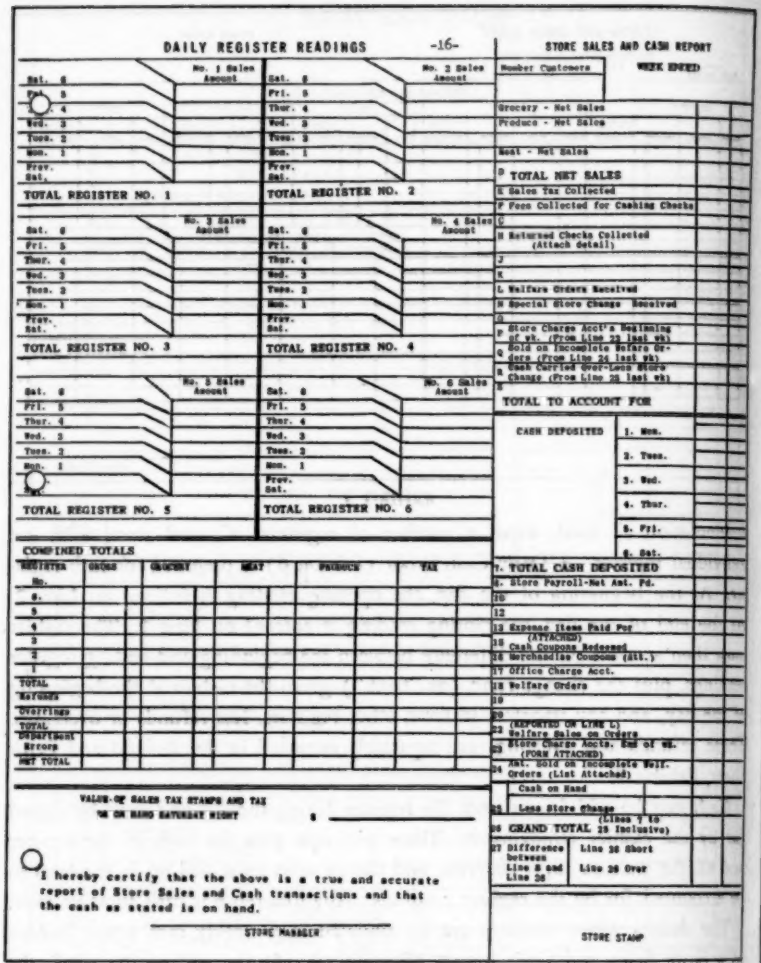
Store Manager

EXHIBIT 7

accumulation of totals from a number of registers. Control starts with the individual register. A Daily Cash Proof (Exhibit 6) is prepared for each register. At the beginning of the day, the opening reading is entered on Line 2. At the end of the day, the closing reading is entered on Line 1. The cashier must then account for the difference between the beginning and ending register readings, plus the change fund (or "bank") given the cashier at the beginning of the day, and any transfers in from other registers, less refunds or overrings. These refunds and overrings are separately recorded in the Refund and Error Sheet, Exhibit 7.

Cash may be withdrawn from the register during the day and must be signed for by the cashier removing it. These pick-ups, plus the cash in the register and all the welfare slips, coupons, and charge sales must add up to the total to be accounted for by the register readings. Any difference is cash short or over.

The daily register readings are accumulated in a weekly cash report known as a Store Sales and Cash Report (Exhibit 8). At the end of the week, the totals accumulated for grocery, meat, produce, and sales tax for each register, are listed. This departmental analysis is not made daily because the chain is primarily interested in weekly comparisons. All sales, sales tax collected, and fees received for cashing checks as well as other receipts are balanced against deposits, cash paid-outs, and cash on hand. The register also records the number of times the total key is rung, indicating the number of customers during the week. Two copies of Exhibit 8 are prepared. The main office, which supplies all



DAILY REGISTER READINGS -16-

STORE SALES AND CASH REPORT

Number Customers WEEK ENDED

No. 1 Sales Amount

Sat. 6
Fri. 5
Thur. 4
Wed. 3
Tues. 2
Mon. 1
Prev. Sat.

TOTAL REGISTER NO. 1

No. 2 Sales Amount

Sat. 6
Fri. 5
Thur. 4
Wed. 3
Tues. 2
Mon. 1
Prev. Sat.

TOTAL REGISTER NO. 2

No. 3 Sales Amount

Sat. 6
Fri. 5
Thur. 4
Wed. 3
Tues. 2
Mon. 1
Prev. Sat.

TOTAL REGISTER NO. 3

No. 4 Sales Amount

Sat. 6
Fri. 5
Thur. 4
Wed. 3
Tues. 2
Mon. 1
Prev. Sat.

TOTAL REGISTER NO. 4

No. 5 Sales Amount

Sat. 6
Fri. 5
Thur. 4
Wed. 3
Tues. 2
Mon. 1
Prev. Sat.

TOTAL REGISTER NO. 5

No. 6 Sales Amount

Sat. 6
Fri. 5
Thur. 4
Wed. 3
Tues. 2
Mon. 1
Prev. Sat.

TOTAL REGISTER NO. 6

COMBINED TOTALS

REGISTER No.	GROSS	GROCERY	MEAT	PRODUCE	TAX
6					
5					
4					
3					
2					
1					
TOTAL					
Refunds					
Overrings					
TOTAL					
Department Errors					
NET TOTAL					

VALUE OF SALES TAX STAMPS AND TAX ON HAND SATURDAY NIGHT $ _____

I hereby certify that the above is a true and accurate report of Store Sales and Cash transactions and that the cash as stated is on hand.

STORE MANAGER

	Grocery - Net Sales
	Produce - Net Sales
	Meat - Net Sales
D	TOTAL NET SALES
E	Sales Tax Collected
F	Fees Collected for Cashing Checks
G	
H	Returned Checks Collected (Attach detail)
J	
K	
L	Welfare Orders Received
M	Special Store Charge Received
N	
P	Store Charge Acct's Beginning of wk. (From Line 23 last wk)
Q	Sold on Incomplete Before Orders (From Line 24 last wk)
R	Cash Carried Over-Long Before Change (From Line 25 last wk)
S	TOTAL TO ACCOUNT FOR

CASH DEPOSITED	1. Mon.
	2. Tues.
	3. Wed.
	4. Thur.
	5. Fri.
	6. Sat.
7.	TOTAL CASH DEPOSITED
8.	Store Payroll-Net Amt. Pd.
10	
12	
13	Expense Items Paid For (ATTACHED)
15	Cash Coupons Redeemed
16	Merchandise Coupons (Att.)
17	Office Charge Acct.
18	Welfare Orders
19	
20	
22	(REPORTED ON LINE C) Welfare Sales on Orders
23	Store Charge Accts. End of wk. (FORM ATTACHED)
24	Amt. Sold on Incomplete Well. Orders (List Attached)
25	Cash on Hand; Less Store Change
26	GRAND TOTAL 25 Inclusive) (Lines 7 to
27	Difference between Line S and Line 26: Line 26 Short / Line 26 Over

STORE STAMP

EXHIBIT 8

the merchandise and controls the bank balances, gets the original. The duplicate remains in the store.

It is interesting to note that the daily cash report of a limited price variety chain classifies credits as "receipts" and debits as "disbursements." Thus, in Exhibit 9, payroll deductions for social security and withholding tax are included among the "receipts." The obvious reason for this practice is that the chain

REPORT #_____

DAILY CASH REPORT

Office Copy - White
Store Copy - Yellow

DATE _____ 195___

LINE NO.	RECEIPTS		LINE NO.	DISBURSEMENTS	
1.	Net Sales (Excluding Taxes)		38.	Kitchen Credit	
2.	Sales Tax Collections		39.	Frt. & Cart.-On Hdse.(Fwd. with Invoice)	
3.	Federal Excise Tax Collections		40.	Bank Deposit (Attach Deposit Slips)	
4.	Sundry Income (Details on Reverse Side)		41.	Display Supplies (Attach Vouchers)	
5.	Scale Receipts (Attach Scale Report)		42.	Advertising (" ")	
6.	Employees Old Age Benefit Deductions		43.	Salaries (" ")	
7.	Employees Group Life Insurance Deductions		44.	Store Supplies (" ")	
8.	Withholding Tax		45.	Light (" ")	
9.	Retirement Deductions		46.	Heat, Power & Water (Attach Vouchers)	
10.	Cash on Hand--Beginning of Day		47.	Maintenance (Attach Vouchers)	
11.	Frt. & Cartage Vouchers on Hand-Beg. of Day		48.	Incidentals (" ")	
12.	Cash Overage		49.	Dues & Subscriptions (Attach Vouchers)	
13.	Bakery Receipts (Amount Due Store)		50.	Cash on Hand--End of Day	
14.	Beauty Shop Receipts (Amount Due Store)		51.	Frt.&Cartage Vouchers on Hand-End of Day	
15.	Beauty Shop Receipts (Amount Due Lessee)		52.	Local Hdse. Purchases (Attach Inv.) Dept.	
16.	Telephone Rebates		53.	Local Hdse. Purchases (" ") Dept.	
17.	Reclaimed Wages		54.	Local Hdse. Purchases (" ") Dept.	
18.			55.	Local Hdse. Purchases (" ") Dept.	
19.			56.	Local Hdse. Purchases (" ") Dept.	
20.			57.	Cash Shortage	
21.			58.	Paid out for Local Concessions (SHOW NAME AND DEPT.)	
22.			59.		
23.			60.		
24.			61.		
25.			62.		
26.			71.		
27.			72.		
28.			73.		
29.			74.		
30.			75.		
31.			76.		
32.			77.		
33.			78.		
34.			79.		
35.					
36.					
37.	Total (Same as Line 74)		74.	Total (Same as Line 37)	

End of Month Accruals (Expenses Not Paid)

Salaries	
Light	
Heat, Power & Water	

Remarks:

CERTIFIED CORRECT

Cashier _____

Store Manager _____

EXHIBIT 9

employs many clerks who are not familiar with double entry bookkeeping. Local purchases are recorded at cost in order to balance cash. A memorandum is also made of the retail value of these purchases because the chain uses the retail method of inventory.

A daily report of transactions in a retail jewelry store must account for charge sales and collections as well as cash. The Daily Report, Exhibit 10, which shows this, is particularly interesting because of the need to account for both federal excise and state sales taxes. A running balance of the accounts receivable control is maintained. Charges for the day are added to the opening accounts receivable balance. Payments are deducted from this total.

DAILY REPORT

COMPANY: DATE:

CHARGE SALES		$
Accounts Receivable Balance Start of Day	$	
New Charge Sales for Day "A"		
Federal Tax "B"		
State Sales Tax "B"		
Repair work (watches & jewelry)		
TOTAL CHARGES FOR DAY		$
CREDITS TO ACCOUNTS RECEIVABLE		
Down payments received for day "C"		
Collections received for day "D"		
Merchandise returns "A"		
Federal Tax on merchandise returns		
TOTAL CREDITS FOR THE DAY		$
CASH RECEIPTS FOR THE DAY		
Cash sales of merchandise "A"		
Down payments received for day "C"		
Collections received for day "D"		
Bad Debts Recovered		
Cash Repair Work		
Federal Tax on cash sales "E"		
State sales tax on cash sales "E"		
TOTAL CASH RECEIVED FOR THE DAY		$
BANK DEPOSIT FOR THE DAY		
Regular Account		
Special Account		
TOTAL DEPOSITED IN BANK		$
CASH OVER OR SHORT FOR THE DAY		$

"A" Insert only the selling price of merchandise excluding Federal and State taxes.
"B" Federal and state taxes on sales shown in "A".
"C" These totals must be the same.
"D" These totals must be the same.
"E" Federal and State taxes on sales made for cash.

EXHIBIT 10

Interpretative Data; Inventory Control

Statistical data is often incorporated with the daily cash report to aid management in interpreting results. One chain compares daily sales with the same day last year and also week-to-date and month-to-date figures with the same periods of the previous year. A restaurant incorporates an analysis of sales by size of check with its Cashiers' Report (Exhibit 11). Statistics are kept of the number of customers and an accounting is also made of sales tax stamps.

Businesses in which the number of different prices of merchandise is small,

THE RESTAURANT COMPANY

CASHIERS' REPORT

Store No. _____ Shift No. _____ Date _____

SHOES	LUNCH REGISTER		CIGAR REGISTER	
	READING	AMOUNT	READING	AMOUNT

Total Sales	
Miscellaneous Cash Received	
Cashiers' Bank	
Total	
Salary Paid-Outs	
Expense Paid-Outs	
Net Accountable Cash	
Total Cash Delivered to Manager	
Deduct—Sales Tax Stamp Collections	
Net Sales Cash Delivered to Manager	
Cash Over or Short of Register	
Lunch Sales per Register	
Total Cash from Lunch Sales	
Total Returns from Checks	
Cash Over or Short of Checks	

CENTS	NUMBER	AMOUNT	
5			
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			
80			
85			
90			
95			
1.00			
Paid			
Total			
Police			
Void			
Unpaid			
Total Checks			

SHOES	CUSTOMERS			LID READINGS
	TOTAL	NO SALE	NET	

SALES TAX STAMPS				
	.01	.02	.03	TOTAL VALUE
Starting				
Ending				
Difference				
Value				

Cashier _____ Verified by _____ MANAGER

EXHIBIT 11

may use physical inventories to check the cash received. Gasoline and service stations, for example, can control cash by means of inventories taken daily or at the end of each shift. At a cigar counter, inventories may be controlled in

SALES SLIP

DATE	STORE	SALESMAN	BOOK & CHECK NO.

NAME _____

ADDRESS _____

10	20	12	28	13	28	30	31	50	55	PRICE	AMOUNT
WHITE DR. SHIRTS	HOSE	SPORT SHIRTS	UNDERWEAR	BASO. & T. SUITS	PAJAMAS	BELTS & GARTERS	SUS-PENDERS	MUFFLERS	RAINCOATS		
11	16	40	17	41	18	66	70	43	51		
FANCY DR. SHIRTS	SILK TIES	SWEATERS	KNIT TIES	JACKETS	BOW TIES & SETS	HAND-KERCH.	JEWELRY	SLACKS	GLOVES & G. M. SETS		

DEP'T	QUAN.	OTHER ITEMS		

PRICE ADJUST. DEP'T. AMOUNT	X	TOTAL MERCHANDISE		
		ADD: SALES TAX		
		EXCISE TAX		
		SUB TOTAL		
LESS: EXCHANGES AND CREDITS				
AMOUNT REC'D.		TOTAL AMOUNT		
HAT:		AMOUNT	TAX	
		TOTAL SALE		

CUSTOMER'S COPY

PLEASE RETAIN THIS SALES CHECK. IT MUST BE PRESENTED WHEN MAKING ADJUSTMENTS

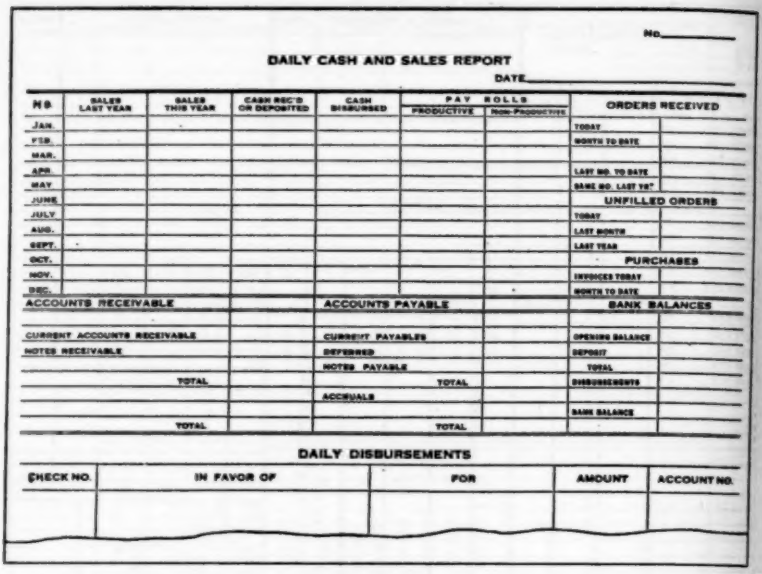
EXHIBIT 12

DAILY SALES RECORD

CITY _____
DATE _____

FILMS	RETAIL PRICE	TOTAL UNITS SOLD	TOTAL RETAIL PRICE
KODACHROME FILM 127			
KODACHROME FILM 120			
KODACHROME FILM 620			
KODACHROME FILM 116			
KODACHROME FILM 616			
EASTMAN FILM 127			
EASTMAN FILM 120			
EASTMAN FILM 620			
EASTMAN FILM 116			
EASTMAN FILM 616			
ANSCO FILM 127			
ANSCO FILM 120			
ANSCO FILM 620			
ANSCO FILM 116			
ANSCO FILM 616			
TOTALS			

CAMERAS - PROJECTORS	RETAILS



No._____

DAILY CASH AND SALES REPORT

DATE_____

NO.	SALES LAST YEAR	SALES THIS YEAR	CASH REC'D OR DEPOSITED	CASH DISBURSED	PAY ROLLS		ORDERS RECEIVED	
					PRODUCTIVE	Non-Productive		
JAN.							TODAY	
FEB.							MONTH TO DATE	
MAR.								
APR.							LAST NO. TO DATE	
MAY							SAME NO. LAST YR.	
JUNE							UNFILLED ORDERS	
JULY							TODAY	
AUG.							LAST MONTH	
SEPT.							LAST YEAR	
OCT.							PURCHASES	
NOV.							INVOICES TODAY	
DEC.							MONTH TO DATE	
ACCOUNTS RECEIVABLE				ACCOUNTS PAYABLE			BANK BALANCES	
CURRENT ACCOUNTS RECEIVABLE				CURRENT PAYABLES			OPENING BALANCE	
NOTES RECEIVABLE				DEFERRED			DEPOSIT	
				NOTES PAYABLE			TOTAL	
	TOTAL			TOTAL			DISBURSEMENTS	
				ACCRUALS				
							BANK BALANCE	
	TOTAL			TOTAL				

DAILY DISBURSEMENTS

CHECK NO.	IN FAVOR OF	FOR	AMOUNT	ACCOUNT NO.

EXHIBIT 14

Daily Cash Report for a Manufacturer

The use of daily cash reports is not confined to the retailing field, despite the many examples illustrated to this point. Exhibit 14 presents a Daily Cash and Sales Report used by a foundry and includes comparative figures on sales, cash receipts and disbursements, orders received, and unfilled orders. The president, treasurer, and controller thus have a 3-D newsreel of the activities of the business. Illustrations of cash reports in dairies and beverage companies could also be given. Here the problem is one of checking out individual drivers.

Purposes Served by Daily Cash Reports

Daily cash reports are an important tool in the functioning of an accounting system. The control potentialities of a well designed form are significant. An effective form will not only help in controlling cash but will serve as a basic accounting record, aid in controlling purchases and inventory, and provide the information management must have to run a business intelligently.

Joint Venture Accounting for Oil Production

by A. B. FRANZEN*

Centering about the principal provisions of the accounting agreement entered into by joint operators of oil fields (or portions), this article portrays the problems of preparing the development and operating charge allocation to nonoperating owners, which the operator must make under the agreement. Other features of the accounting agreement and of conditions of operation, are also described.

DURING THE LAST TWENTY YEARS joint venture accounting has perhaps been given more consideration than any other phase of accounting in the petroleum industry. A number of the older joint-venture operations were carried on either by verbal agreement or else merely by a letter authorizing a party to operate certain properties until further notice, and stating that the nonoperator would pay its proportion of the costs. In most instances there was no provision for overhead, employee benefits, etc., and there was no accounting procedure to be followed. Today, however, conditions have changed. The old joint venture operations covered only isolated leases where two or more parties owned the working interests. These operations were simple compared to some of the operations being conducted today.

Advantages and Types of Unitization of Oil Production

The trend today is toward unitizing an entire oil field or pool, in which there may be many owners of the operating rights. There are a number of advantages to be gained from unitization. Some of these are:

1. Better conservation of natural resources.
2. More efficient operation with a corresponding reduction in operating cost.
3. Greater ultimate recovery.
4. Reduction in the duplication of overhead, district expense and other indirect costs of similar nature.

There are many types of units. Some are strictly unitization of oil and gas properties, covering possibly only one particular producing horizon, whereas there are others in which all the known horizons are unitized. Some units are formed strictly for secondary recovery operations because the primary production has been completely depleted. In others, secondary recovery operations may

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be conducted in the early stages of the field. In some units, there are gasoline and/or cycling plants involved, which may become part of the property.

The basis of participation in investment, operating and maintenance costs, development, and income, varies in each unit. In some, the participation in investment, development, operating expenses, income, etc. is all on the same basis. In others, especially where multiple horizons are involved, investment and development expenditures may be allocated on the basis of the total adjusted acre feet ownership in all the horizons in the unit. Operating and maintenance costs, exclusive of those incidental to the delivary of gas, may be allocated on the basis of total monthly liquid deliveries from the unit, with the expenditures in connection with delivery of gas being on the basis of gas deliveries. Some operating agreements specify that operating and maintenance costs be borne on an income basis. Since each of the owners may not always be able to market its production currently and with possible differences in sales prices, such a provision very often could prove inequitable.

What particular basis of participation is selected depends largely on the type of unit and the physical operating characteristics. The reservoir conditions are carefully studied by the engineers in order to develop participations which will maintain equity for all interested parties. The accountants can play an important part in making the recommendations for basis of the operators' participation in the various expenditures, etc.

Completing the Operating and Royalty Agreements

The conditions under which unitization is carried on make it necessary that the owners get together and work out an equitable basis for unitizing the properties. Subcommittees of employees of the various owners are set up to study the engineering, legal, operating, accounting and other related problems. After these subcommittees make a report of their studies, a subcommittee on legal aspects proceeds to daft a form of operating and unitization agreement. This draft is then studied by all the interested parties, to determine whether or not the language of the agreement adequately covers the following points:

1. The basis for unitization.
2. The method of operation.
3. The adjustment to be made for tangible equipment turned over to the unit.
4. The basis of adjustment, if any, for intangible well costs.
5. The basis for participating in development, operating and maintenance costs.
6. The basis for allocating unitized production to the tracts comprising the unit.
7. The name of unit operator.
8. The functions to be performed by the unit operator.
9. The accounting procedure, etc. and any other items that might pertain to the particular unit.

After all interested parties have reviewed the first draft of the agreement and furnished the lagal subcommittee with their comments, the necessary revisions, if any, are made and the agreement is then drawn in final form. Usually the majority of the operating interest owners have approved and executed the agreement prior to the royalty owners' unitization agreement being circulated to the various royalty owners. A land committee, comprised of representatives of the various operating interest owners, is usually set up in the larger units for the purpose of contacting the royalty owners. Before a royalty owner will agree to execute the agreement, he wants to know just what effect unitization will have on his income. A lot of time and money is usually spent in educating the royalty owner on the over-all benefits of unitization.

For this and oher reasons, the basis for participating in these unitizations costs should be clearly stated in the operators' agreement. In large units, it is very important that the accountants be present at all preliminary discussions, to make sure that they will understand all phases of the proposed unit. In this way they will be in a position to render valuable assistance in the writing and re-drafting of the agreement. Everything that pertains to the accounting should be clearly spelled out, so that there will be no confusion or misunderstanding after the unit goes into operation.

The operating agreement will provide the percentage of royalty and working interest signatures necessary to make the agreement effective. When the agreement becomes effective, the accounting organization of the unit operator has to get into high gear, in order to be able to perform the accounting as provided in the agreement. The physical equipment must be inventoried, priced and the appropriate adjustments made between the operating interest owners as promptly as possible after the effective date. The agreement usually states that each lessee shall pay or be responsible for the payment of all royalties, overriding royalties, oil payments, net profit contracts and all payments out of or burdens on the lease or leases contributed by it and received into the unit area. This requires the unit operator to prepare an allocation statement on the unitized substances in order that each lessee can make the necessary entries on its books for recording income and also in order that the lessee can make royalty payments, etc.

Drawing Up the Accounting Procedure: General Provisions

The accounting procedure for any joint operation should be drawn up by the accounting representatives of the various operating interest owners. Considerable attention has been given by the industry to standardizing the form of accounting procedure. Within the last twenty years, various organizations, such

as the Petroleum Accountants Society of Oklahoma, the Mid-Continent Oil and Gas Association, the American Petroleum Institute, and the Petroleum Accountants Society of Los Angeles have worked toward this end. During the last few years our company has been using, almost exclusively, the Petroleum Accountants Society of Oklahoma form (often referred to as P.A.S.O. form), with a few minor changes. This is also the form now used by most operators in the units where we are the nonoperator. This form contains the following major parts:

1. General provisions.
2. Development and operating charges.
3. Basis of charges to joint account.
4. Disposal of lease equipment and material.
5. Basis of pricing material transferred from joint account.
6. Inventories.

(Items 4, 5 and 6 not covered by this paper.)

Part 2 is of prime importance and will be considered at some length after brief discussion of the general provisions of the accounting procedure. These provisions cover definitions and specify how billings are to be rendered by the unit operator to the owners. The trend today, especially in the field-wide units, is toward summary form billing by appropriate classifications for investment, operating and maintenance charges, etc. The accountants get together and agree on a chart of accounts for summary billing, which will be usable by each of the nonoperators for receiving these costs into their accounts. Most of the major companies are accepting summarized billings. We prefer them in our operations unless we have some doubt as to the accounting controls maintained by the operator.

This part of the accounting procedure also states how payments shall be made by the nonoperator and makes provision for audit of operator's records. The P.A.S.O. form does not state who will bear the cost of the audit but it is usually understood that such cost will be borne by the nonoperator. In the case of the large units, it is advisable to specify who will bear the audit cost, so there will be no controversy on this point.

Charging Direct Costs

The section of the agreement covering development and operating charges provides for the various items which the operator shall charge to the joint account. Only those of particular interest will be discussed here. The P.A.S.O. form places a five percent limit on the operator's employees' benefits. Since these benefits are constantly increasing, the five per cent limitation is not sufficient to cover most operator's benefit plans. In recent agreements a few op-

erators have requested an allowance up to ten per cent for employee benefits. This is a matter which has to be negotiated between the operator and the nonoperator.

Taxes, especially ad valorem taxes have importance. This is one phase of costs not covered too clearly in the P.A.S.O. form. Let us assume that Company A, the operator of a particular property, owns ½ of a ⅞ interest and the Company B, the nonoperator, owns ½ of a ⅞ interest subject to an overriding interest of 1/16th. Operator A would bill all expenditures with the exception of ad valorem taxes on the mineral interest to the joint account and A and B would each bear fifty per cent of the costs. But, in the case of the ad valorem taxes paid on the leasehold valuation—exclusive of personal property—the billing should be handled as follows:

	Total Valuation	Less royalty and override Valuation	Working Interest Valuation	Tax @ 4.00 per $100.
Company A	$4,000.00	$ 500.00	$3,500.00	$140.00
Company B	4,000.00	750.00	3,250.00	130.00
	$8,000.00	$1,250.00	$6,750.00	$270.00

In the above example, the owners of the royalty were assessed and paid their taxes on a valuation of $1,250 and Operator A rendered the working interest taxes on a valuation of $6,750 and paid a tax of $270. If this tax had been billed through the joint account along with the regular charges, Company B would have been overcharged $5, and Company A undercharged $5. This conclusion assumes that the same valuation was placed on the royalty and working interests, but the general practice is to place a higher valuation on the royalty interest than on the working interest because the royalty interest does not have to stand any of the operating and development costs.

Charging District Overhead

In addition to stipulating the direct costs chargeable to the joint account, provision is also made in the agreement to enable the operator to recover the indirect costs of operating the joint property. These indirect costs fall into two categories:

1. District expense. 2. General overhead.

District expense includes salaries of the district superintendent and his staff, cost of maintaining a district office, cost of maintaining a district camp, and other district costs which cannot be attributed to specific leases or plants. Since

this type of cost concerns only properties in a prescribed geographical area, the indirect costs incurred in the area can readily be identified and accumulated. The P.A.S.O. form provides that such charges shall be apportioned to all leases served, on some equitable basis consistent with operator's accounting practice. A majority of the agreements to which our company is a party provide that actual district indirect costs be distributed to the operations within the district either on a well basis or on a labor payroll basis.

A recent survey of twenty-seven companies in the Southwest indicated that seventeen apportioned these costs on a well basis and ten on a labor payroll basis. However, some agreements provide for a fixed monthly charge for indirect costs, to be made in lieu of a proportion of actual cost. If a fixed charge is adopted, it will be likely to correspond closely to the average charge on similar properties where an actual cost basis is used. Where our company is the operator, we normally use the well basis, with one drilling well considered the equivalent of four producing wells.

Charging General Overhead

General overhead, broadly speaking, includes all applicable functions of the operating company above the district level, performed by departments such as executive, production, accounting, purchasing, legal, land, industrial relations, payroll and traffic. The P.A.S.O. accounting procedure form provides for an overhead allowance in lieu of any charge for division office and principal business office expenses of the operator. A company engaged in several phases of the petroleum industry, with activity extending over a large area, finds it somewhat difficult to determine accurately how much of its overhead cost applies to some one segment, such as production or gas plant operations. Once an apportionment is made to the major sections of the company, the matter of allocation to districts and particular locations must be worked out.

Because there is a wide divergence of methods and no set pattern for currently distributing general overhead costs, it has become common practice to use a flat rate basis. For example, in the case of lease operations, the rates per well might be adopted on basis of depth and reservoir conditions, ranging from $15 to $75 per producing well and $100 to $350 per drilling well. In the case of a gasoline or cycling plant, the size of the plant and the complexity of the operation would be taken into consideration in negotiating the flat rate charge for overhead. In some instances the overhead allowance has been agreed upon as a percentage of total expenditures. It is customary to use a different percentage applicable to operating expenditures from that applicable to investment expenditures.

It is the responsibility of the accounting department to determine which items of expense are covered by the overhead allowance and which are to be charged directly to the joint account. This calls for careful observance of the contract terms. In recent years, because of the increased use of technicians (such as chemical engineers, petroleum engineers, gas engineers, and geologists), some contracts stipulate that the time and expense of technical personnel for services rendered at the site of operations shall be chargeable directly to the joint account, even though such personnel may be stationed in the general office. A geologist "sitting on a well" or a civil engineer surveying a pipe line route would fall in this category. This means that time reports and expense accounts must be closely watched for indications of work done which can be charged to the joint account. The problem sometimes arises in regard to the head of a technical department who spends time on the operational site, as to whether he is a "management" or a "technical" employee. Also the employment of company laboratory and research facilities for joint interest projects must be kept under surveillance.

In keeping with the basic intention that the operator recover his actual overhead cost pertaining to a joint operations, most agreements provide that the overhead rate may be amended if found to be either insufficient or excessive. Past experience, however, has indicated that the rates are seldom changed. This has been due to the obstacles encountered in providing conclusively any case for a change. For this reason, it is highly important to give careful study and consideration to the overhead provisions at the time the agreement is drafted. It is suggested that the overhead provisions be in as much detail as practical. In addition to setting out items to be included in overhead, items which are not included but which may occur frequently and be controversial, should be listed as specific items not to be included in overhead.

The overhead apportionment devices which have preferred use, are still ones which are largely arbitrary. Where actual costs are apportioned, the controversial questions are: (1) What properly is included in cost? and (2) Is the method of apportionment equitable? The method through which a percentage is applied to costs has the advantage of being flexible as prices rise or fall. The foremost question which occurs with this method is as to the fairness of the percentage. Any time an error is made in the joint account billing, a corresponding correction must be made in the overhead. If one rate is used for expense and another for investment, an audit of the joint account will require considerable time to be spent in checking distribution as well as validity of charges. The question also frequently arises as to how service credits (house rents, etc.) should be treated in computing overhead, i.e. should they be eliminated from

total cost, allowed to reduce the cost base, or treated as debits for calculating purposes?

The flat rate overhead method lacks flexibility in regard to price fluctuations and in times of rapid inflation or deflation could create a hardship on one or more of the parties. However, it is easy to handle and requires little auditing.

Regardless of the method used to recover general overhead, the operator can expect eventually to be called upon to justify the charges. It is not practical for the nonoperator to make a detailed study of the operator's general expense as it applies to the joint operation. In the first place, it would take too much time, because of lack of familiarity with the operator's organization and procedure. Secondly, the operator normally prefers not to divulge all of the details of its operations. Therefore, the best approach appears to be to allow the operator to prepare an analysis of his costs which can then be checked in a short time by verifying data where feasible and reviewing the remainder as to reasonableness.

When called upon the justify the overhead schedule for any of our joint operations, we normally follow the practice of circularizing all general office departments with a request for certain data relative to efforts devoted to the operation. The replies from the departments are then analyzed and summarized in order to develop a total cost figure.

It is to the advantage of a company operating several joint properties to use the same overhead method for as many of the accounts as possible. This standardization tends to reduce the operator's accounting cost. Simplification will help reduce confusion and errors. The nonoperators should bear this in mind and consider that it is to their advantage where possible to allow the operator to employ a method which is standard within his own organization.

The Basis of Charges to Joint Account

The accounting agreement usually provides that material and equipment purchases and services procured, shall be charged at price paid by operator, after deduction of all discounts actually received. However, it is not always possible for the operator to purchase all the material as it is needed for the joint operation. Therefore it is necessary that the operator be allowed to furnish material from his stock. The accounting procedure will set out the basis for these charges. In the larger units, the stock account may be owned by the participants in the unit.

In a period of material shortages, it may be necessary for the operator to pay premium prices in order to continue operation. For this reason, as a protection

to the operator and also for the nonoperators' benefit, it is usually advisable to include in the operating agreement a clause similar to the following:

> "Notwithstanding any limitations of the Accounting Procedure, Exhibit ———— attached, during such time as tubular goods and other equipment are not available at the nearest customary supply point, operator shall be permitted to charge the joint account for all tubular goods and other equipment transferred from operator's warehouse or other properties to the premises covered by this agreement with such costs and expenses as may have been incurred in purchasing, shipping and moving the required tubular goods and other equipment to the premises covered by this agreement; provided, however, that each nonoperator shall first be given the opportunity of furnishing in kind or in tonnage, as the parties may agree, his or its share of such tubular goods and other equipment required."

Charges for use of operator's exclusively-owned facilities are also treated in the agreement under Part 3 of the accounting procedure.

Terms of the Operating Agreement May Affect Tax Liability

In the preparation of any form of joint operating agreement, the tax consequences must be carefully studied, to avoid creating an association taxable as a corporation. Consideration must be given to the rules applied by the Internal Revenue Service as set out in I.T.'s 3930 and 3948. One of the most important provisions is to permit each co-owner to take his share of the production in kind or direct its sale. In this connection, two or more co-owners of oil and gas properties should not irrevocably appoint the same person or one another as their agent for a fixed or determinable period of time to sell or market for their joint account the oil and gas produced from their jointly owned properties. To do so might subject the joint venture to treatment for federal income tax purposes as an association taxable as a corporation.

Equitable Cost Allocation Dependent on Accounting Agreement

Because of the multiplicity of interests usually involved, joint venture accounting cannot be haphazard in any respect. It is a specialized feature of an industry characterized by intricate and, often, involved accounting problems and procedures. It is also an industry subject to the impact of technological change and to provisions of contracts and local law. The main goal of joint venture accounting is to obtain fair transfers of cost to the co-owners. As will have been apparent from the body of this article, it is a goal difficult to accomplish. The accounting procedure agreement is the principal way in which it is effected, a fact which gives the accountant for a unitized field or pool an essential place in the scheme of things.

Costing for Municipalities—A Field for Development

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The importance of, obstacles to, and nature of cost accounting for municipal government units are given explanatory treatment in this article. Discerned is a need for performance standards and other media of comparison to assist municipal management in effective use of tax revenues.

ONE OF THE FIRST PROBLEMS to arise in the adoption of cost accounting is that of selecting the activities or operations for which costing should be undertaken. In the case of municipalities, a limiting factor in this connection is the difficulty of setting up standard units of performance for administrative, legislative, advisory, or technical activities. Many accountants and administrators contend that municipal cost accounting should be extended to all activities, believing that standard measurements can eventually be worked out, even though such measurement criteria for all units or costs for each activity may not be available at the beginning. They base their stand on the following reasons:

1. Cost accounts provide detailed supporting information for the general accounts.
2. One account will not be overcharged at the expense of another when costs are properly distributed to all activities.
3. Private industry has proven that the usefulness of cost accounting is not limited to manufacturing alone.
4. Those who have extended municipal cost accounting to a wide range of activities, have found the results satisfactory. (Municipal Finance Officers Association, of the United States and Canada *Governmental Cost Accounting* prepared for the Committee on Cost Accounting by Carl W. Tiller. $1.00.)

Although the extension of municipal cost accounting to all activities thus seems desirable, it must be admitted that certain activities are more readily adaptable to cost accounting than others. Cost accounting can be readily used in activities which deal with physical output and also in those in the performance of which the allocation of time, material and equipment is fairly constant through successive operations. For many other types of government activity, it is apparent that most analysis is impractical. Still, the number of municipal functions to which cost accounting can be applied satisfactorily is large. For example, the following list of municipal activities, with a measurable cost unit indicated opposite each, is quoted from *Cost Accounting* by John G. Blocker, McGraw-Hill Book Co., 1948. $5.50.

Municipal Activity	*Unit for measurement of cost*
Education	Per pupil
Police and fire protection	Per capita
Welfare and relief administration	Per relief case
Trucking service	Per ton mile
Garage service	Per hour of repair work
Electric light plant	Per kilowatt hour
Water supply plant	Per thousand gallon
Ashes and refuse collection	Per ton
Street cleaning	Per mile
Construction of highway	Per mile
Street repairing	Per square yard
Purchasing	Per purchase order of dollar of purchase
Storage	Per cubic foot
Mining	Per ton
Canning	Per can
Installation of street signs	Per sign
Installation of traffic signals	Per signal

If it is desired to extend cost accounting to all activities, the following one approach is to obtain total costs of each activity by properly classifying expenditures in the general accounts. Then, where tangible products or other standards of measurement exist, unit cost can be determined by dividing the total cost of the activity by the number of units completed or other standard units of measurement. Attention should be given to the development of measurement standards and unit cost as soon as possible.

Relationship of Municipal Cost Accounts to General Accounts

Although cost accounting deals with transactions which are also recorded in the general accounting system, it deals with them in a different manner. Outlays for such items as equipment, materials, and general expenses are recorded in the general accounts as expenditures at the time of their purchase. Cost accounting requires that such items be distributed over a period of time to all activities or work units affected. There are three possible conditions of relationships between the cost records and the general account. These are presented as follows by the Municipal Finance Officers Association in *Governmental Cost Accounting*, previously referred to:

1. Cost accounts completely independent.
2. Cost accounts separate but related by reconciliation.
3. Cost accounting directly subsidiary to the general accounting and balanced with the control accounts.

The method first mentioned is quite unsatisfactory for most purposes, even though it still prevails in many places. With cost accounts merely on a memorandum basis, the cost figures determined are likely to be unreliable, i.e., since the costs are not tied in with the balanced general accounts, there is much less assurance that all pertinent costs have been taken into consideration or that calculations have been made accurately.

The third method, that of making the cost accounts subsidiary to control

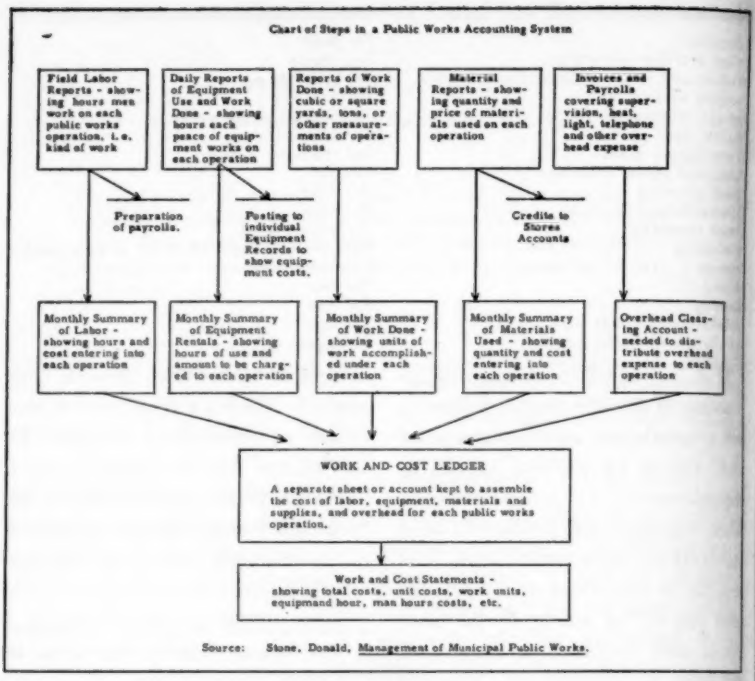
Chart of Steps in a Public Works Accounting System
Field Labor Reports - showing hours men work on each public works operation, i. e. kind of work
Daily Reports of Equipment Use and Work Done - showing hours each peace of equipment works on each operation
Reports of Work Done - showing cubic or square yards, tons, or other measurements of operations
Material Reports - showing quantity and price of materials used on each operation
Invoices and Payrolls covering supervision, heat, light, telephone and other overhead expense
Preparation of payrolls.
Posting to individual Equipment Records to show equipment costs.
Credits to Stores Accounts
Monthly Summary of Labor - showing hours and cost entering into each operation
Monthly Summary of Equipment Rentals - showing hours of use and amount to be charged to each operation
Monthly Summary of Work Done - showing units of work accomplished under each operation
Monthly Summary of Materials Used - showing quantity and cost entering into each operation
Overhead Clearing Account - needed to distribute overhead expense to each operation
WORK AND COST LEDGER
A separate sheet or account kept to assemble the cost of labor, equipment, materials and supplies, and overhead for each public works operation.
Work and Cost Statements - showing total costs, unit costs, work units, equipmand hour, man hours costs, etc.

Source: Stone, Donald, Management of Municipal Public Works.

EXHIBIT 1

accounts carried in the general account group, is certainly the best. This method is supported by practically all of the leading writers in the field of cost accounting. It is declared the best because it leads to greater accuracy in costing, for costs actually incurred and charged in the general financial operations are included—and only those. Not only does this alternative provide greater accuracy in costing, but it also provides a valuable check on the general financial records, in the process of balancing the cost accounts with them. Any discrepancies would be up for investigation. In addition, the method encourages the proper classification of expenditures between asset and expense accounts. In these ways, cost accounting tied into the books provides greater accuracy in the financial accounting, also.

It is apparent that, in a sense, the cost accounts are merely an elaboration of the general accounts when they are so tied in. They simply extend the accounting procedure beyond the accumulation of costs by departments or activities to the determination of costs by units for the departments or activi-

WORK ORDER

PUBLIC WORKS DEPARTMENT
CITY OF _____

Supervisor (or Foreman) _____ Date _____

Classification of Work: Job No. _____

Repair _____
Betterment _____
New Construction _____

Keep Job Costs: Yes _____ No _____

Location: _____

Work to be:

Costs Estimates:

Summary
Labor _____
Materials _____
Equipment _____
Overhead _____

Total _____

_____ Superintendent

Supervisor's Report of Completed Work:

Date _____ Supervisor _____

EXHIBIT 2

ties. Hence, the cost accounts should properly total up to the balance of their respective control accounts in the general ledger. To make certain that they do agree, thereby providing a check on accuracy, is the chief aim of the method of control-subsidiary relationship between the cost and general accounts.

Should this relationship be impossible to obtain or impractical to use, the cost accounts should at least be reconciled with the general accounts regularly. This reconciliation would take into consideration any items used in the cost calculations which were not part of the financial accounting. Depreciation on equipment is a possible

REPORT OF USE OF EQUIPMENT

CITY OF _____

Item _____ Unit of Use _____

Period _____ Rental Rate per Unit _____

Date	Job No.	Job No.	Job No.	Total
Total Units				
Total Charge				

Posted to:
___ Job Ledger
___ Cost Department General Ledger

EXHIBIT 3

example of such an item. The reconciliation would also disclose items of expense included in the financial accounts which were not used in cost determination. Even though this method lacks the automatic check feature of the preferred method, it does provide a considerable degree of protection.

Eight Essentials of Cost Accounting for A Municipality

However the relationship of the cost and general accounts may be viewed, there are a number of other considerations, recognition of which the Municipal Finance Officers Association describes as essential to the efficient installation and operation of municipal cost accounting. Our dis-

cussion of them may be keyed to their enumeration in the publication already cited.

1. Realism in design of a system.
2. Careful preparation for an installation.
3. Promptness of information.
4. Simplicity.
5. Accuracy.
6. Consistency.
7. The actual use of the data.
8. Establishment of standard costs.

The first two essentials have to do with the installation of a cost accounting system. First, reasonable degree of realism is required, that is, the installation of a cost system should not be extremely detailed. Although, in theory, it may be desirable to assemble costs on a very detailed basis, practice has proven it unprofitable to attempt to emphasize the fine points of cost accounting when a system is first installed. As an example, it is important to determine the average unit cost to the library for cataloging books but, in the beginning at least, no library should undertake the determination of the unit cost of each of the eight or ten processes involved in cataloging. Experience has disclosed that, if the cost accounting installation follows the major lines of good practice, refinements will come naturally with the progressive use of the system. However, careful preparation should precede the installation of the system. All available procedures and methods should be carefully studied for possible improvements before they are included in the new plan. Also, after the development of the system has been completed, the system should be carefully reviewed from every standpoint.

Promptness in yielding information is of special importance in the operation of any cost system. Of course, if the cost figures are to be any aid to efficiency, such data must be in the hands of the administrators in time for consideration in making current decisions. Cost data submitted several months after operating decisions have been made are of little or no value in relationship to the costed activities.

As to accuracy, as most accountants have learned, the chances for inaccuracies in general accounting are many. In cost accounting, the chances for error are even greater, because cost accounting goes further into detail than general accounting, especially in the task of allocating costs to particular operations and units. This calls for many additional decisions in the selection of costs and at methods of distributing them to the various operations or units, all subject to error. It behooves the accountant, therefore, to take what measure he possibly can to see that cost data are sufficiently accurate for safe use.

Consistency is desirable in cost as in general accounting. Procedures and methods used, as between activities, departments, and for the municipality as a whole, should be reasonably consistent over a period of years. Such a cost accounting system must provide

DAILY TIME CARD

Name of city_____ No._____

Employer_____ Date_____

Position_____

Work or Job No.	In	Out	In	Out	Hours

Employer_____ In charge_____

EXHIBIT 4

that figures and their calculations may not be changed at will. For example, if the basis of depreciation is allowed to be changed capriciously the cost accounts are open to manipulation by successive, politically motivated administrations.

It goes without saying that the results of the cost system should be useful. The important thing to understand in this connection is that accounting is made for administrators, not administrators for accounting. The value of governmental cost accounting is found in its utility to municipal management. When the cost data provided by a cost accounting system is not of use in the current administration of operations, the cost system should either be changed or abandoned.

The development of standard unit costs, the last item on the list of essentials, will, obviously, increase the use and value of cost accounting. Such standards may be based on the past and on what is expected in the future. In other words, the standards should stem from experience and should provide criteria for measuring the efficiency with which activities are performed. Although comparison of unit costs between different cities must be made with caution because of variable factors in elements of cost, the development and use of comparisons, along with standards, is to be encouraged.

Some Reasons Municipal Cost Accounting has Developed Slowly

One problem in the extensive use of cost accounting in government arises

from the fact that many items of expenditure are joint costs. Single overhead items (such as supervisor's wages, depreciation on buildings, etc.) may be incurred for more than one activity. Hence, these overhead items must be allocated to the various activities. This calls for judgment, especially where external comparisons are to be made. For internal uses, this is not so important if the methods of allocation availed of are consistent from period to period.

The most important problem, as in industrial accounting, is that of measuring performance. Measurements of performance alone are of no value. They become so only when they can be compared with performance standards of the governmental unit or with similar outside performance data. However, there are so many variables in service activities that comparable standards are quite difficult to set. For example, the costs per run may be used as the basis for comparing the operating cost of the fire departments of two cities. But are the runs comparable? In street cleaning, cost of cleaning per mile is a possible standard, or a yard-mile of sweepings removed may be used. But what is a clean street?

Another limitation which is not usually present in private industry is caused by the fund structure and budgetary accounting peculiar to government. This particular hindrance should not retard the development of cost accounting, but is merely a special situation of which cognizance must be taken. In the event that one activity is financed from two or more of the municipality's funds, it may be necessary to record separately the cost from each fund and then combine the figures in order to secure the complete cost. This suggestion is offered in the Municipal Finance Officers Association's publication, mentioned earlier.

In some jurisdictions, statutes, rules and regulations may affect the installation of cost accounting. In some cases, local units of government may change their accounting work only under the direction of a state department which supervises local accounts. In other instances, statutory provisions, charters or ordinances may require amendment before any changes in accounting procedures may be made.

The use of certain cost data may be limited by civil service employment at the monthly or annual salary and other reasons peculiar to government. For example, even though the cost records may indicate where and how to reduce labor costs, such reasons as permanency or status and salary, the difficulty of assigning employees to work outside of a particular classification, and the difficulties of transfers between departments may hinder a government department in realizing the benefits from such a reduction in labor costs.

Lack of information on municipal cost accounting methods and procedures for guidance has also been given as a limitation. There is the fear

MASTER TIME BOOK

DEPARTMENT OF PUBLIC WORKS Period Ending_____19___

Payroll No. (1)	Name (2)	Ocupation (3)	Weekly Time S	S	M	T	W	T	F	(4) Total Hours	Rate per Hr. (5)	Amount Earned (6)	Deduction for_____ (7)	Amount Payable (8)	Check Register or Signature (9)

EXHIBIT 5

that municipal cost accounting, unless done by trained accountants, might easily produce inaccurate information because little information is available for guidance. However, with the growing body of experience on the subject, it is hoped that the restrictions caused by the absence of any American book upon governmental cost accounting may soon be eliminated.

Municipal Cost Accounting Records Used

Space does not permit a detailed discussion of all the records needed in a complete cost accounting system for a municipality. Labor costing will be emphasized here. Exhibit 1 gives an over-all picture of activity accounting for a public works department.

Every job, activity, or process should be accompanied by a work order (Exhibit 2) evidencing the authority to carry on with the work. Other forms will show what work was done, and how. The original documents which serve as evidence of work performed and expenditures incurred are usually spoken of as field reports. Obviously, the particular form of such documents will depend on the local situation and need. Such reports as time reports, performance reports, stores requisitions, equipment reports and "charge slips" for indirect costs are essential to a cost accounting system.

Exhibit 3 illustrates a report on the use of equipment. If the activities involved are of a permanent nature, making use of a permanent payroll with only a very few (if any) changes in equipment, semi-monthly report forms may be used very satisfactorily. However, in the case of work in which employees and equipment are frequently transferred from job to job, daily report forms are required.

Although the accounting forms for

labor may vary with the needs of the local situation, it is important that these needs and the uses of the various forms be known. Accounting for personal service in any municipal department presents two problems. The first is the accumulation of the earnings of each employee for the purpose of preparing payrolls. The second problem is the distribution of each employee's time to the appropriation and cost accounts, work operations, jobs, streets, districts, etc.

The accounting for labor begins with the daily field report or daily time records. This report may be a separate one or may be included in the report covering equipment and other costs. If the latter, each day each employee should fill out a daily time card (Exhibit 4) showing the job account number on which he worked and the time spent on each. If there is a central place for checking in and out, this card should be stamped in the time clock by each employee to show the time of beginning and leaving work. The time cards may be posted individually to job accounts, if the volume is small, or summarized for posting, if the volume is large.

If the labor reports are separate, the daily field reports prepared by the foreman of each crew, together with the mechanic's daily time cards, may be used as the basis of the labor payroll. The field foreman enters the time of each subordinate on weekly time sheets which serve as master time books. These weekly time sheets are identical with the first six columns on the master time book illustrated in (Exhibit 5) and are used as the basis of the payroll for many of the employees. A slightly different time sheet or master time book, carrying sixteen columns for days of the month, is needed for men paid semi-monthly.

The use of a master time book makes it unnecessary for foremen to prepare weekly time sheets, as the time earned by each employee can be taken directly from the foremen's daily reports. However, it is good practice for each foreman to carry time books for use in checking the time on his field report, before submitting these to the office. These books prove of value in case of errors in time and aid in placing responsibility upon the foremen.

To avoid posting each daily time report separately to the cost accounts, summaries should be made, and only the totals posted to the various appropriation and cost accounts. Such a distribution may be made on the labor distribution sheet somewhat like the one illustrated in Exhibit 6. This form of labor distribution sheet is designed for hand posting. However, if the volume is large, the use of proper machines would be profitable.

Regular reports from all employees, showing the amount of time which they work at each activity or job, are essential in cost accounting. Whether employees are employed by the hour, by the day, at a monthly salary, or on

LABOR DISTRIBUTION SHEET

For month ending_____

Day of Month	Total		Account Name or Number		Account Name or Number		Account Name or Number		
	Hrs.	Amt.	Hrs.	Amt.	Hrs.	Amt.	Hrs.	Amt.	
1									
2									
3									
4									
24									
25									
26									
27									
28									
29									
30									
31									

EXHIBIT 6

an annual basis, their time must be reported as to all the activities and processes in which they engage. Otherwise, useful cost data for labor will not be obtained.

The frequency of labor reports will depend upon the type of activity or job. In such departments as the public works department, where the same employees work on several jobs during the day, daily reports are essential, so that each job may be properly charged with its share of labor costs. For example, if a report for a day's work is not prepared and turned in until several days later, work details may be forgotten and inaccuracies are likely to exist.

Economy in accounting can often be obtained by combining the report of time consumed with the report of work accomplished on the same form, thereby reducing the amount of paperwork and number of documents handled.

A Need to Be Met

Sketched in this paper have been the conditions which surround attempts to develop municipal cost accounting and the more usual procedures introduced to effect it. There is no good reason why costing for municipalities should not be more widespread and represented by more thoroughgoing applications, so that municipal management may be better served.

Surely a persuasive argument is not necessary to establish the great need for cost controls over the financial activities of governmental agencies. One has only to think of the many billions of dollars furnished these agencies by the taxpayers to realize that governmental units has become a huge task, comparable to the operation of large commercial enterprises. Certainly, if private enterprises have found it profitable to spend thousands of dollars in adopting cost accounting systems and solving such cost problems as determining units of measure and unit standards, the application of such procedures would likewise result in savings for the municipal taxpayers.

Characteristic Problems of Hospital Accounting

by EUGENE L. ZIEHA

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The special situation of nonprofit institutions, with respect to general and cost accounting, is set forth in this article with the conditions surrounding hospital operation as the concrete example. Among the more important differences which concern accounting, are noted the existence of outside contributions of funds and services and the obligation to offer care below cost or as charity. Both of these factors affect the income-cost relationship. The moot place of depreciation is also noted. The potentials of cost accounting to aid hospital management are emphasized.

A HOSPITAL IS A COMPLEX SERVICE institution which performs many diversified activities in protecting the health of the community. Most aspects of its daily accounting routine are very similar to those found in various types of business organizations, although some are more closely related to the specialized functions of the hospital. The industrial accountant would experience no serious difficulties in becoming familiar with the general accounting routine resulting from hospital activities. Attention is given here, rather, to some of the basic differences in viewpoint which exist between accounting for charitable institutions of this type and accounting for private business organizations.

It is well to call to mind that hospitals, along with other nonprofit organizations and governmental units, follow a system of accounting known as "fund accounting." Briefly, this entails the inclusion in the books of record a number of groups of accounts in which each group, or fund, is an independent unit maintaining an equality of debits and credits. The American Hospital Association recom-

mends the use of a general fund, a plant fund, a temporary fund (expendable for specified purposes only) and an endowment fund.[1]

Concepts of Cost and Income Differ From Business Practice

The fundamental difference between charitable institutions and business organizations which influences the nature of hospital accounting is the lack of a market test of the results of the operations of the hospital. The market test referred to is that of selling the product or services of the organization for an amount greater than the costs incurred in the production and distribution of such product or services. The profit-seeking business is constantly concerned with this market test. If it passes it, the success of the firm is assured, unless poor financial management destroys the solvency of the company through misguided expansion or other long-term investments.

The charitable hospital is not faced with an identical test. The hospital exists to render service to the community. The measurement of the success of its operations is not whether it is able to sell its service to individual patients at a price greater than the costs incurred in the rendering of the service. Market acceptance of a hospital's service does not stand as an indicator of the efficiency of its operations. The hospital does not sell service on a competitive basis, but rather tries to help all those in the community who need hospitalization, regardless of their financial ability to pay for the services received.

The difference noted above gives rise to many points of interest to accountants. In industrial accounting there is emphasis on matching income and related costs. The accountant, in reporting such a matching of costs and income, indicates the economic acceptance or nonacceptance of the endeavor of the business organization. The hospital accountant is not faced with this same problem of matching cost against income in order to measure acceptance of the effort expended by the hospital. In fact, he (almost) need not think of income and costs in the same sense that they are used by the industrial accountant.

As to income, another source exists in addition to the fees charged to the hospital patients. Hospitals depend on charitable contributions, both to support their current operations and to finance the acquisition of plant assets for long-term use. Thus, income comes to mean something different to the hospital than it does to the business concern. The hospital administrator is interested in an inflow of funds to carry on his activities, rather than in a measurement of the amount accruing to the organization because of services rendered.

[1] *Handbook on Accounting, Statistics, and Business Office Procedures for Hospitals,* American Hospital Association, 1950, Section I, p. 38 (American Hospital Association, Chicago, Ill.)

On the cost side, a similar situation is presented to the hospital accountant. Cost is worthwhile to know but, as it is not "matchable" with income, it loses a certain amount of its value as accounting information. This is especially true with the allocation of long-term costs, such as those of fixed assets, to current operations. It may be that the hospital accountant has more to gain through a prorating of current expenditures made for the benefit of present patients than through an allocation of costs in the way in which they are understood by industrial accountants. And the hospital administrator must devote himself to the financing of current operations, with reference only to the needs of the patients and the community and not to the income which will be yielded by such operations.

Other Points of Difference in the Hospital Situation

In addition to the basic difference between institutional accounting and commercial accounting resulting from the lack of a market test of charitable services, there are some other features which make accounting for hospital activities differ from accounting for business operations. For one thing, hospitals, in addition to being dependent on contributions of funds are frequently the recipients of donated services. It would be most unusual to find anyone actually donating their services to an industrial organization, but services at every level are at times donated to hospitals. Furthermore, there is room for much more charitable work of this type on the part of individual members of the community.

Another important difference is based upon the fact that hospitals do not carry on operations through the commitment of a capital fund which they are obliged to maintain and which they are expected to augment through profitable operations. Of course, established endowment funds carry with them the responsibility of capital maintenance, but here it has been specified by the contributors that only the income, not the principal, is to be used for the carrying out of hospital activities. In short, hospital funds, unless restricted by contributors, are expendable, while the funds of business organizations are expected to go through a cycle, with their recovery growing out of the original expenditure.

There is another difference between commercial and institutional operations which the accountant must bear in mind. Frequently a considerable amount of restriction exists regarding the type of use which may be made of hospital funds. Many of the gifts received by hospitals contain restrictions which limit the availability of the funds for current operations. In some cases, endowments are established which give the hospital access to only the income from the fund. Even the use of this income may be

restricted to a designated purpose. Numerous gifts have been restricted by contributors to the purchase of designated pieces of equipment. On the other hand, it is fairly uncommon for a business firm to have any sizeable amount of funds that are restricted as to use. The usual restrictions placed on business firms are in connection with funds established to retire outstanding securities and restrictions on the declaration of dividends.

Cost Accounting Needed for Pricing and Control

Cost accounting is being looked toward as a possible source of aid in the pricing of hospital services because some of the factors which determine prices in the competitive business world are not present in this partly charitable activity. The forces of competition which play such an important part in the pricing of goods in the commercial world do not hold the same position of importance in the determination of hospital prices. With hospitals crowded and services frequently being extended below cost, price competition is not to be expected. Furthermore, hospitals normally occupy a semi-monopoly position toward their patients. Many patients have no choice but to enter a particular hospital either because their doctor is on the staff or because of their nearness to it when becoming ill or injured.

A more specific need for cost accounting for pricing purposes has arisen because of negotiations hospitals must enter into with various groups which pay the bill on behalf of individual patients. Reliable cost data regarding hospital operations within a community or an area would prove invaluable in the determination of the rates to be paid for patients who have hospitalization under nonprofit insurance plans, such as Blue Cross. In addition, cost data are frequently expected by federal or local governmental agencies which, at times, assume responsibility for the payment of hospital fees of individual patients under various types of contractual agreements.

The preparation of budget estimates for future periods would be facilitated by the availability of reliable cost information. With such uncertain sources of revenue as public charity and fees from patients who are accepted without investigation of their ability to pay, it appears that hospitals should know well in advance the amounts that will be needed to carry on operations. Such information would be of interest, not only to the hospital administrators but also to business leaders who take an interest in civic activities. A presentation to them of the financial needs of the hospital, supported by a detailed analysis of the cost of operations in prior periods, would be a worthwhile

supplement to the hospitals' requests for contributions. Also, when funds are obtained for all charitable activities in community-wide solicitations, detailed accounting reports, including cost data, could well be used in the distribution of such funds among the participating agencies.

Although the pricing problem is foremost in the minds of many hospital administrators when they express a desire for cost data, it is likely still greater contributions to hospital operation may be made through using cost data for control. Cost accounting can serve hospitals by providing information for the more efficient administration and operation of these large and complex organizations. The potential values of both cost analysis and cost control can be better understood when it is realized that hospitals perform many services similar to those performed by certain commercial enterprises. This is especially true as regards the primary jobs of housing and feeding the patients while they receive medical care. Much experience gained in the fields of hotel and restaurant management may be applied to similar hospital activities by a comparison of the costs of performing such activities.

Shall Depreciation on Hospital Facilities Be Recorded?

Thus, although a system of cost accounting should prove to be extremely valuable to hospitals, numerous special problems must be solved by hospital accountants. The most serious of these problems, that relating to difficulties involved in accounting for fixed assets, is the result of two different factors. The first is that the system of fund accounting followed by hospitals is not readily adaptable to the recording of charges to indicate the current expiration of long-term investments in fixed assets. Inasmuch as fixed asset accounts are to be found in a separate self-balancing accounting fund, while all current operating results are shown in the general fund, it has not been usual in the past to make entries for depreciation of fixed assets. In fact, there is no provision in this system for depreciation entries. This makes it difficult to tie in cost records with the books of account if depreciation is to be considered a cost.

To solve this phase of the problem, the American Hospital Association recommends a series of interfund entries.[2] These entries, unaccompanied by any transfer of assets from fund to fund, do not follow the usual procedures of fund accounting. Their general method is to record a depreciation expense entry in the general fund and to then offset it by an increase in the general fund capital account. A second entry would record a decrease in the asset account found in the plant fund and a decrease in the related plant fund capital account.

This recording of depreciation is contrary to the established system of

fund accounting which has proven so useful in accounting for governmental bodies and nonprofit institutions. It is, therefore, likely to become the basis for much confusion regarding hospital accounts. It is an attempt to introduce into fund accounting the long-term accrual concept so foreign to this system's attempt to show the disposition of curently available resources to meet current expenditures.

There is also a second difficulty related to this question of depreciation of hospital assets. Hospital plant facilities are frequently gifts. If these assets are donated, should a recognition of their expiration be considered as an element of hospital costs and used as such in reimbursement computations? An entry of this type would have the long-run effect of charging the cost of plant facilities against the current generation twice, once when the funds are provided and a second time when hospital costs, if they include depreciation, are recovered in hospital charges to patients.

If reimbursement of this recorded depreciation expense were obtained by the hospital, further complications would develop. There would be the building up of an amount of cash not required for current operations, inasmuch as it would represent the current conversion of long-life fixed assets. If such a cash balance were thus to be accumulated, should it go into the general fund or into the plant fund? If it is placed in the plant fund, there would be the establishment of a monetary fund subject to all the problems of investment uncertainty and risk. If it remains in the general fund, the amounts recovered through this converson of fixed assets to cash would likely go toward the expansion of current activities rather than provide for the future acquisition of fixed assets.

The Problem of Donated, Trainee or Intern Services

There are a number of other unique problems which arise in connection with an attempt to introduce cost accounting into the scheme of accounts of a hospital. Mention is made of a few of these in order to indicate the discussions faced by anyone who begins to inquire into hospital costs.

Donated services frequently introduce a complication into the determination of the costs of hospital services. Some of these services would ordinarily have to be performed by employed help if they were not performed by those interested in work of a charitable nature. However, as help of this type is usually received intermittently and then only on a part-time basis, it appears that such services could hardly be included in any computation of costs. In fact, it is likely that the donors would not like to feel that their services are considered a cost for which the hospital

[8] IBID p. 66.

expects to receive reimbursement from patients. In addition, a part of this work, intended to bring additional cheer and comfort to the patients, is of a supplementary nature and would not be performed by hired employees. This type of help can best be completely ignored by those who attempt to account for hospital activities.

A special type of donated services is presented in those hospitals staffed by members of religious organization. Although these individuals are devoting their lives to charity, it is also necessary that the organizations of which they are members receive enough to provide them with the basic necessities of life. It is possible to make a book entry charging the hospital with the services at the prevailing rate of pay of employees doing the same class of work. This would be offset by a credit to a liability account due to the religious organization of which they are members. The organization could then draw on this account to obtain their necessities (usually through the use of hospital facilities such as the cafeterias). In most cases there would be a limited number of charges against this account and the practical cancellation of this debt to the religious organization would represent a major financial contribution to the hospital. An alternative to the method described above would be simply to include the maintenance of the members of the religious organization as an overhead cost of the hospital. However, this would further increase the difficulties of departmental cost analysis.

The extensive training program undertaken by many hospitals also poses a special cost problem. Private companies train their own employees, but hospitals having nursing schools are training nurses to work for them, for other hospitals or to perform private nursing duties. During the training period, the complete housing and feeding of students is usually on the premises of the hospital. Some tuition is normally paid and some services are performed by the student nurse, but it appears to be difficult to establish a basis to charge such services to departments benefited. In a like manner, there is the work of interns who perform extensive services in the course of receiving their training. The cost of maintaining and training these men is also difficult to charge to individual patients through a system of cost accounting.

The Same—and Different—In Important Ways

An attempt has been made in the preceding pages to indicate some of the basic differences between hospital accounting and accounting for private business organizations. For the most part, such differences stem from the lack of a competitive market test of the type measured by a matching of income and costs. Additional differences are introduced by the facts that

the nonprofit hospital does not have proprietary capital accounts and that it is a common situation for hospital assets to be restricted as to use. Other differences are the result of contributions of funds and donations of services by charitably inclined members of the community.

However, despite the differences between charitable hospitals and competitive business enterprises, it is apparent that the hospital administrator has a need for cost accounting data obtained by methods similar to those followed in commercial accounting. Such information is desired as an aid in the pricing of hospital services. In addition, it is believed that cost accounting will prove as valuable as an instrument of managerial control in hospitals as it has in industry, although the differences in character of the two types of enterprises do lead to a number of difficulties in the introduction of a cost system. The most serious of these is in connection with the question of the recognition of depreciation in hospital cost accounts.

The special problems of hospital accounting hold interest for the thinking accountant. Contemplation of them should give him a better understanding of some of the problems which all charitable institutions face. More than that, he may gain a better understanding of the theoretical background of accounting in his own industry if he tries to analyze the basic differences between his particular situation and that of the hospital accountant.

ADVERTISING AGENCIES NEED CLIENT COSTS

by Colville MacDougall

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APPRAISING THE CREDIT of clients and determining all costs incurred on their behalf is of prime importance to advertising agencies, in order to protect working capital and also to develop a schedule of fees to be charged for the several services rendered. It is for these reasons that publishers' associations have made the following recommendations to agencies:

1. To budget income, costs and expenses on the basis of contracts with clients.
2. To maintain adequate cost records from which service and other charges can be determined.

Many agencies have faced financial reverses resulting from assuming that the fifteen per cent commission allowed by publishers is sufficient to cover service and other costs, and from failure to determine billings and costs applicable to each client. In addition to these misconceptions, failure to allocate cost elements to departmental or functional activities has prevented advertising agencies from setting up any pricing structures for such services as copy writing, design and art production, radio scripts and market research.

It will help, in this situation, if a key number is assigned to each client. This number, used as a prefix, may be incorporated in all records, while specific work or jobs would carry additional numbers, as clients' orders are put into production.

Before developing this approach further, it will be of assistance to depict the conditions under which advertising agencies operate.

Relationship Between Agencies and Publishers

Usually, articles upon advertising agency accounting have failed to emphasize the relationship that exists between agencies and publishers. Since 1920 publishers of national newspapers and other periodicals have organized associations to perform the following functions:

1. To determine which advertising agencies are entitled to recognition.
2. To investigate the financial conditions of each agency for the purpose of determining the amount of credit each agency is entitled to. This is indicated by a rating.
3. To review annually the financial condition of each agency for the purpose of confirming changes in credit rating. Usually, financial and operating statements are filed quarterly by the agencies with the publishers' associations.

In turn, the agencies have a source of information on publishers. The annual Standard Rate and Data Service, issued in several parts, shows the names and addresses of publications, frequency of issue, sizes of pages and columns, advertising rates and discount terms as well as mechanical and other requirements of each publication. The service also provides rate and other changes which take place during the year while, at the same time, supplying timetables, rate and other schedules pertaining to radio and television stations. In planning an advertising program for clients, this service data is an important tool of advertising agencies in determining:

1. Classification of publications.
2. Circulation in metropolitan and other areas.
3. Break-down by class of reader.
4. Audience tests.

Also, the service facilitates the checking of aggregate rates with budget dollars appropriated for sales promotion in proposed geographical areas.

The importance of classification of advertising media is obvious. It governs the type

of media which will effectively interpret the client's product or brand to potential customers. Knowledge and judgment have to be exercised in this selection and consideration given to the following types:

1. Newspapers—Daily, Sunday, Weekly and miscellaneous—farming and other grades.
2. Magazines—National, trade, industrial and house organs.
3. Radio and Television—Network and local programs and spot announcements.
4. Outdoor—Display posters, bus, car and railroad signs.
5. Direct-Mail materials—Catalogs and display sheets.
6. Miscellaneous—Moving picture productions, point of sale materials—dealer aids, convention materials, etc.

One condition underlying advertising agency operations is that they commit themselves to purchase advertising space, radio and television time, and advertising materials on behalf of clients. Space is purchased several weeks or months prior to publication date. Publishers require payment on specified fixed dates according to established credit terms. The following tabulation indicates alternative terms for advertising in magazine publication:

1. Commission 15%: discount of 2% net, payable 10th of publication month.
2. Commission 15%: discount 2% 10 days from invoice date; bills from publisher rendered on 10th of month preceding date of issue.

In addition, invoices for materials usually have to be paid in advance of delivery to clients of printed matter or art work, the costs of which, if not billed, are carried as work-in-process-jobs on the books of the advertising agency.

Cost Records Needed

Maintaining accurate cost sheets for each job is an important function in advertising agency operations, not only for controlling and assembling costs but also in determining profit on business secured from each client. Design of the form is important in order to reflect accumulation of billable and nonbillable items as well as computation of profit margins. A columnar sales analysis record reflecting material and salary costs will facilitate postings to appropriate accounts for billings and cost of billings in the general ledger. Also, a trial balance of uncompleted jobs in the job cost ledger serves to support the control account (work-in-process) in the general ledger.

As to salary costs, it is necessary to know how much of each employee's time is chargeable to each client's job. For this reason, daily time records should show the cost of the time of each class of employee segregated between hours chargeable to each client (indicating job) and hours chargeable to general classifications of work not directly involving clients. Summary of employee time may be developed on a weekly or monthly basis and classified as to (1) account executives, secretaries, copy, art-production and (2) media selection, radio-television and research. These are the creative employees whose functions produce the completed job, whether it be illustrative art, radio scripts or research service. All payrolls should be summarized to show the following classification:

1. Direct costs (productive time).
2. Indirect salaries, according to appropriate expense accounts.

This is necessary in order to facilitate the posting of general ledger accounts.

For materials, it is necessary to emphasize the established billing practices of advertising agencies embracing commission loading on purchased materials and other items. The cost accumulation of purchased materials presents no particular problem. However, the closing of cost sheets, when jobs are completed, should provide for the following classifications:

1. Cost of materials—billable with commission added.
2. Cost of materials—billable at cost.
3. Cost of materials—nonbillable.

CONSTRUCTION ACCOUNTING—COMPLETED CONTRACT BASIS

by C. S. DeBanto

Accountant, B. G. Danis Co., Inc., Dayton, Ohio

THE CONSTRUCTION BUSINESS continues to be very active. Among other factors, the large volume of construction work being done is due to government installations, private home-building, and expansion programs of schools. Work on churches, hospitals and other public buildings also provides business which apparently will continue well into the future.

Accounting in the construction industry is quite different from accounting for businesses in which, when a sale is made, the article is shipped or transferred to the buyer and the billing (or payment) is taken into income at once. Our company uses the completed contract method, under which income is not shown on our records until the work on a contract is finished and approved. Since it is possible for a contract to continue as long as several years, many problems may arise during its life.

Types of Contracts and Management Needs

There are several different types of construction contracts. Two of the most common are cost-plus and fixed-price contracts. Under the cost-plus type all costs are charged to the owner plus a negotiated percentage to cover overhead and profit. The costs to be charged include materials, labor, insurance (shown as a percentage of labor), equipment rental, sub-contractors' costs and other incidentals. In closing a cost-plus contract, provision is often made, for the protection of the owner, that total costs will not exceed a stated maximum amount. The fixed-price type of contract simply names a total price for which the work will be done.

In these contracts, it is common for the owner to withhold payment of a stated percentage of the contract price until the job is completed and approved. This retained percentage, as it is called, can become very important as a financial problem if it applies to a number of jobs running for a long period of time. However, because this practice applies to sub-contractors as well as prime contractors the latter have a certain measure of protection, in that they may withhold full payment from their sub-contractors until they are satisfied that the work has been properly performed. Final payment is usually made on these accounts thirty days after completion of work if no question arises.

The risks are great in the contracting business and this is one of the reasons why its management should have good accounting methods. When you consider that a contract, often for a set price, is made for a job extending far into the future, that much of the work on this job may depend upon the elements such as rain or snow, and that hazards unknown to the contractor may exist, then you can realize that the contractor must have something on which to rely. This "something" includes his experience, capability, organization and accurate records of past and current transactions, and all possible information on future work.

Good accounting is also protective. If a material invoice was erroneously charged to a fixed price contract instead of a cost-plus contract, the contractor would not recover this cost, because it would become an unidentified additonal cost on the fixed price contract.

Job Records, Billings, Characteristic Accounts

Our accounting records consist of the usual journals and ledgers. In addition, one of the most important records is a job record, in which we set up each job as we are awarded it. Every job is assigned a number in this record. This number is very important as it is used for identification purposes on all charges to the particular job. For instance, all purchase orders issued for material show the number; the covering invoice is coded by reference to the purchase order and so entered in the purchase register. Labor charges are accumulated in our payroll department from daily time reports showing (among other things) the job number. The job foremen also turn in to the office data, by job number, on equipment used. This is turned over to the billing department to be held for invoicing; at the end of each month, the various job accounts will show all accumulated costs which have been entered from the various records. They will also show the total credits for invoices which have been submitted to the customer.

Billing on cost-plus contracts is made each month by detailing all material charges and attaching copies of vendors' invoices, so that the cusotmer will understand exactly what he is paying. Labor charges are shown as totals for each week and supported by copies of payrolls showing employee's name, occupation, rate and wages. Rental charges for equipment used on the job are billed on the invoice in units of hours, days, weeks or months. (Equipment rented consists of innumerable items and may range from a large bulldozer or truck to a small tool such as a pick.) A total of all these charges is then secured, to which the agreed precentage-fee is applied and the result is the total billing.

Billing on fixed-price contracts is much simpler. The total price of the contract, as bid, includes amounts for each type of work, e.g., as $100,000 for cement-work, $500,000 for structural steel, $250,000 for roofing, etc. The contractor, in collaboration with the owner's architect, carefully estimates at the end of each month the percentage of completion of each type of work and applies this percentage against the dollar amount involved, to secure the dollar value of completed work. The total dollar value of all completed work becomes the billing.

The contractor's billings are forwarded to the architect of the owner and must be fully approved by the architect before payment is certified. The architect works very closely with the contractor and is aware of all progress made on the contract. However, he is primarily an agent of the owner and must be satisfied with every detail of the structure for which a billing is made, before he will approve it for payment. When you add to this situation the previously mentioned fact that a percentage of the billing, usually ten per cent, is not paid until the entire contract is completed, it can be seen that the contractor has to "jump the hurdles" in order to get his money.

Among the accounts which are peculiar to this industry, we find the following:

1. Deposits—The contract may require that a percentage of the contract price be deposited as a guarantee of performance or payment of bills. However, in many cases today, contractors prefer to obtain a surety bond to cover this deposit. Another type of deposit which is paid many times is that kind necessary to secure plans and specifications from the owner's architect, prior to bidding on a job. These amounts are refundable or nonrefundable according to the discretion of the architect.
2. Equipment—Much equipment is necessary to perform the varied operations involved. To name a few units, there are large mechanical shovels, tractors, graders and scrapers, smaller tools such

as shovels, wheel-barrows and hammers. In addition, a large fleet of trucks and autos is necessary to transport materials and personnel. On these numerous assets, detailed records are required to show pertinent information as to cost, maintenance and depreciation.

3. Insurance—Coverage must be maintained in proper amounts, which are often very large. The contractor must protect himself against numerous liability problems presented on his jobs, as well as protect his large investment in equipment and in uncompleted construction up to the time coverage is assumed by the owner.
4. Rental of equipment income—A contractor will often find it possible to rent out equipment not being used, either to other contractors or individuals. This can become a sizeable income for a contractor owning a large number of these assets.

Reflecting Results on Financial Statements

Relative to accounting, as previously noted, income on a contract is not recorded until it is completed. In order to handle this, we charge all costs, as incurred, to uncompleted contract cost and credit all billings, which are termed "estimates" to uncompleted contract income. Then, each month, entries are made for completed contracts, taking their costs and income out of the uncompleted contract accounts and into similar completed contract accounts. At this point, the balance of uncompleted contract operations, or the excess of costs over billing, represents a control over all uncompleted jobs in our job record. Gross profit on completed contracts, which is the difference between completed contract income and completed contract cost, becomes an item of income on the profit and loss statement. Estimated profit on uncompleted contracts, which is the difference between uncompleted contract income and uncompleted contract cost, is shown on the liability side of the balance sheet as a deferred item.

The construction industry has proved very interesting to me. It adds something when I view a large, newly-completed structure having a knowledge of some of the work which was necessary for its building and the many problems which were met and overcome. The beauty and strength of the result have double meaning. It is not untrue to say that accounting skill is an unseen ingredient of it.

A BASIS FOR TRUCK-HAUL COST DETERMINATION

by Ira Houghton

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THERE MAY BE A DEGREE of broader interest, related to trucking operations, in a method of individual haul cost computation—actual against standard—used by an oil field equipment hauler and briefly sketched in this presentation.

The system furnishes a dependable cost for each haul made. Through its use, the cost of any particular haul may be determined at the same time the customer billing is rendered, thereby informing the operator at that time whether or not he had a gain or loss. The special records necessary for the maintenance of the system are not burdensome, but it requires seven to eight months following their installation before completely accurate costs are available for the day-to-day operations of the hauler.

The system is simple in principle. A unit cost for a period is established by dividing the total costs by physical units of operation in terms of t.o.w.'s, an expression further explained below. This gives an actual cost per unit (t.o.w.). The system contemplates the use of a standard cost for this unit of operations, determined from

the actual cost per t.o.w. for the first six months of the preceding seven month period. Unit standard cost obtained on the basis of one month could be used but is not sufficiently reliable to be serviceable.

The t.o.w., which is the unit of measurement, has been so named for the factors which make it up. The T stands for the time factor (man-hours) involved in the haul. The O, being a circle, is used to represent the round-trip miles of all vehicles involved in the haul. The W reflects weight carried or handled. To place, and keep each of the factors on a comparable basis, continuing study is necessary. Based upon a preliminary examination of a part of the hauls of one carrier, we have determined that the production of $10 of revenue requires the following:

2.86	man hours
71.4	round trip miles
20.	tons carried or handled

Each of the foregoing quantities is considered to be a t.o.w. Therefore, if on one haul, there were 2.86 man hours with the equipment traveling a total of 71.4 miles and carrying 20 tons, the haul would consist of three tows, one for time, one for round-trip miles, and one for weight carried. In the actual computations of the tows on any haul, the man hours can be multiplied by .35, the miles by .014, and the tons by .05, which is the same as dividing by 2.86, 71.4, and 20, respectively.

Division of the operations between interstate, intra-state, and local hauls may be accomplished by listing all of the statistics for each of the classifications on a separate sheet of the cost record. Cost record sheets and other refinements of the system (e.g., the policy of recording weights, time, etc.) require detailed instructions if the operation of the system is to be smooth.